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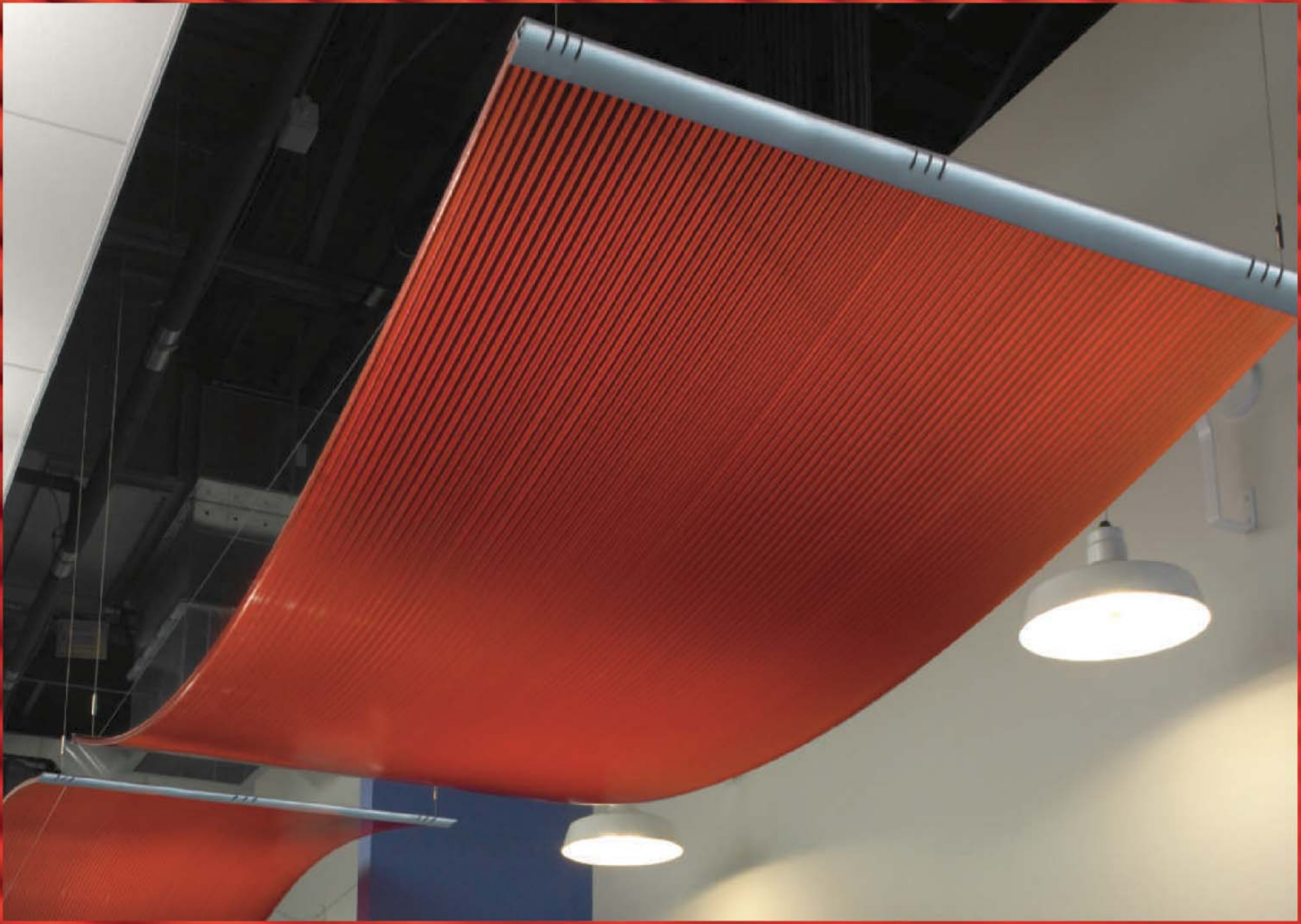

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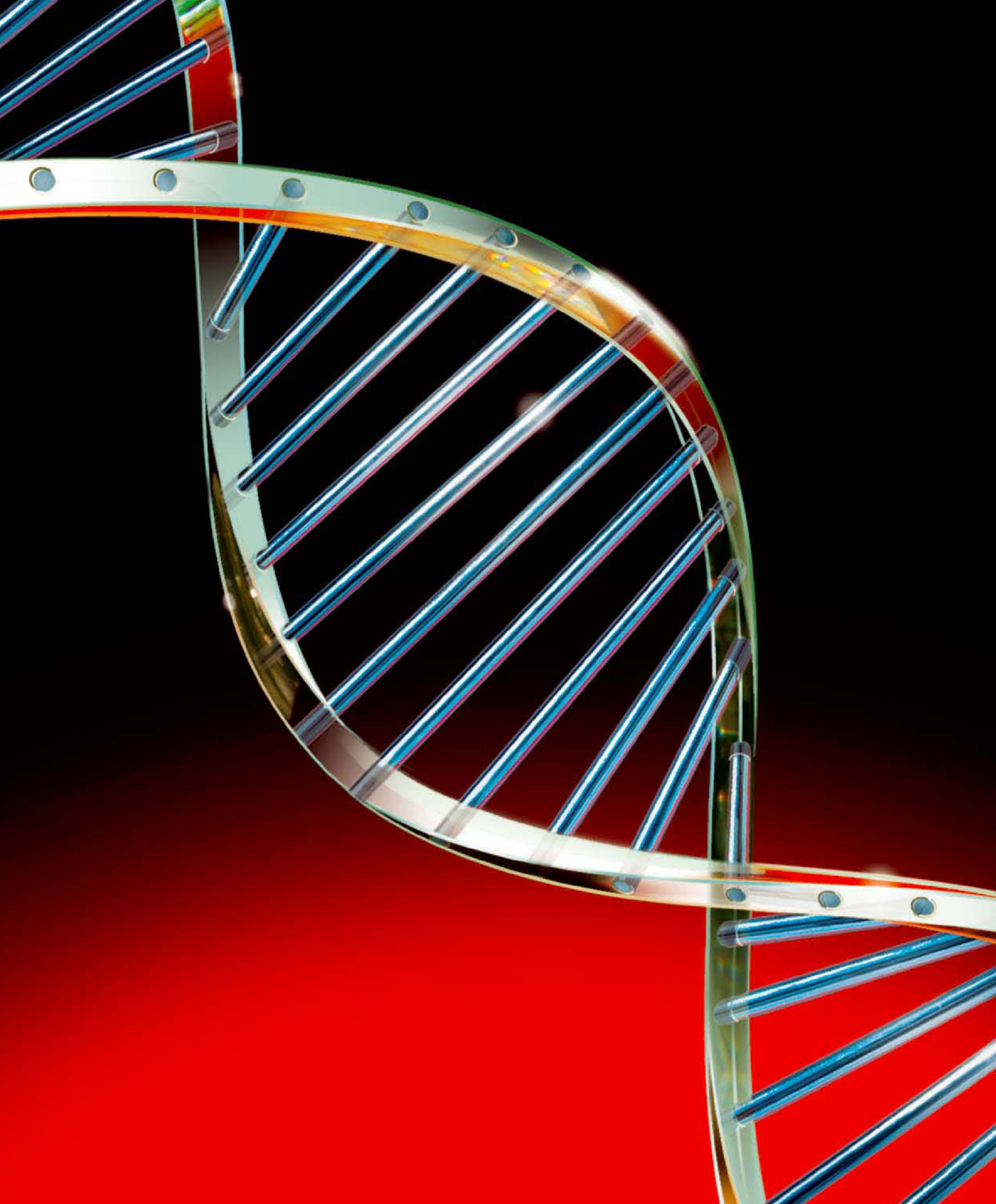

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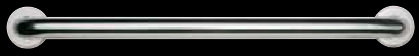

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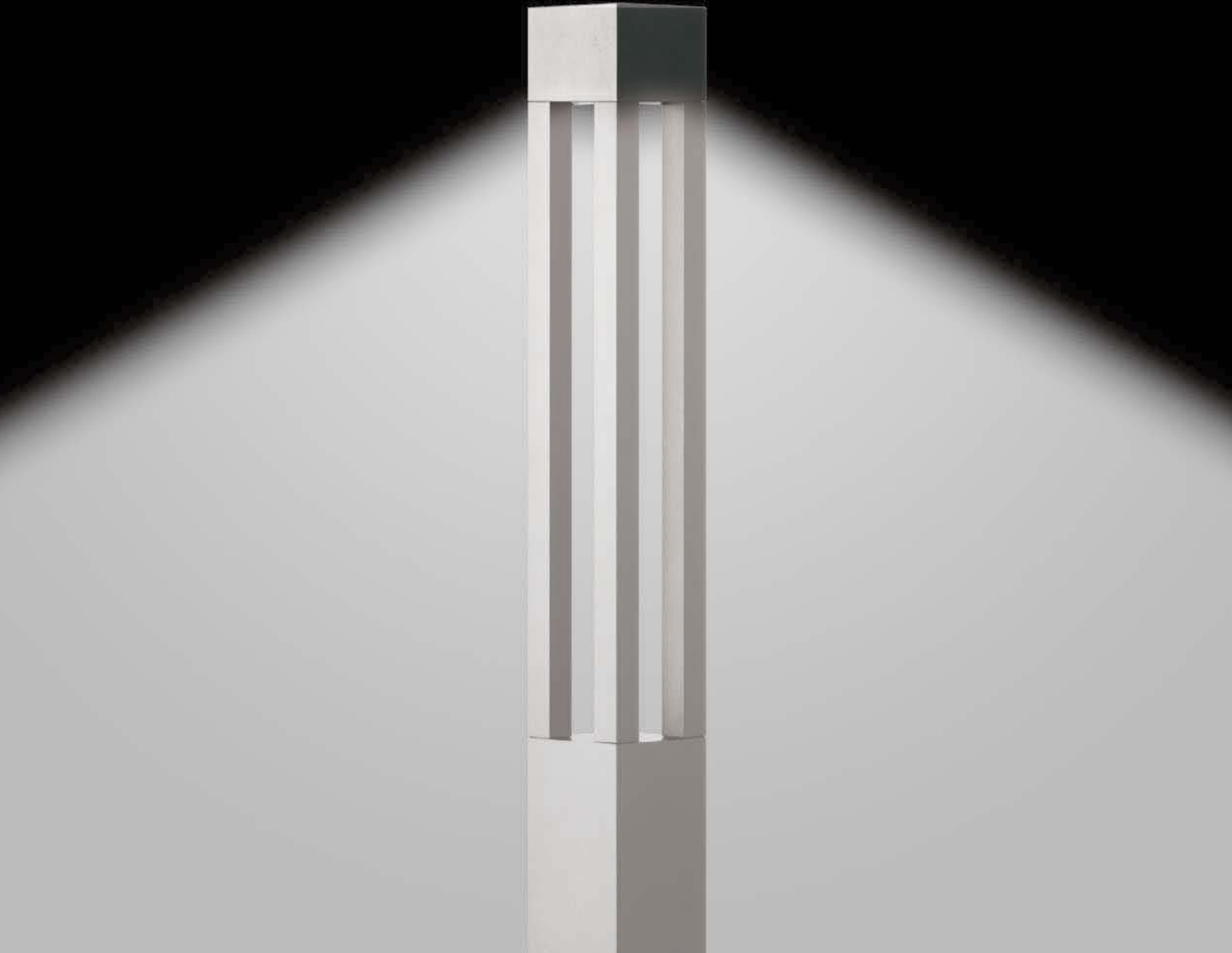

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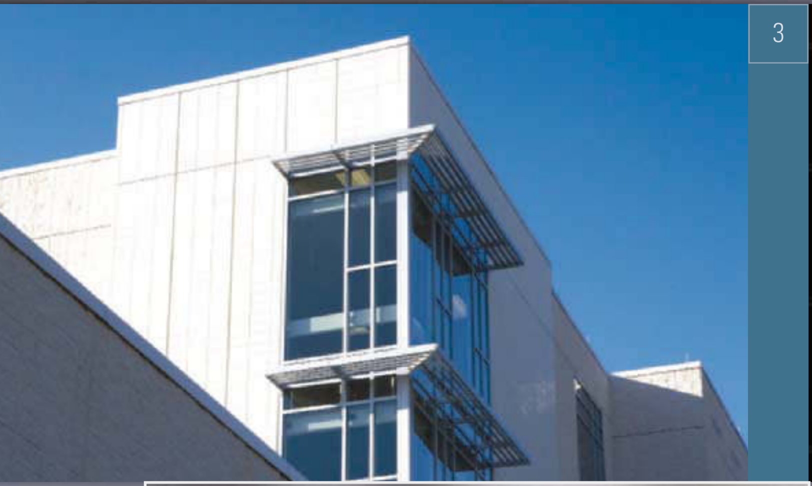

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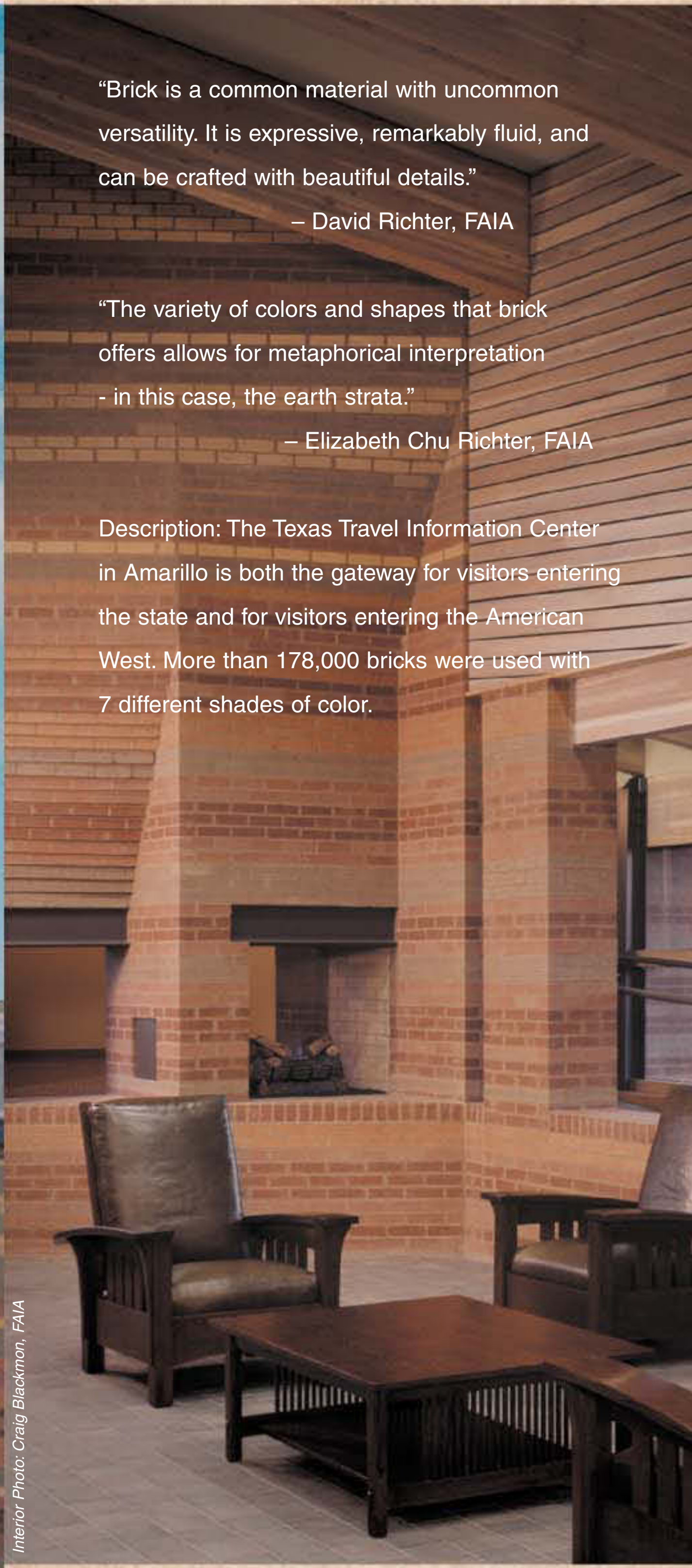

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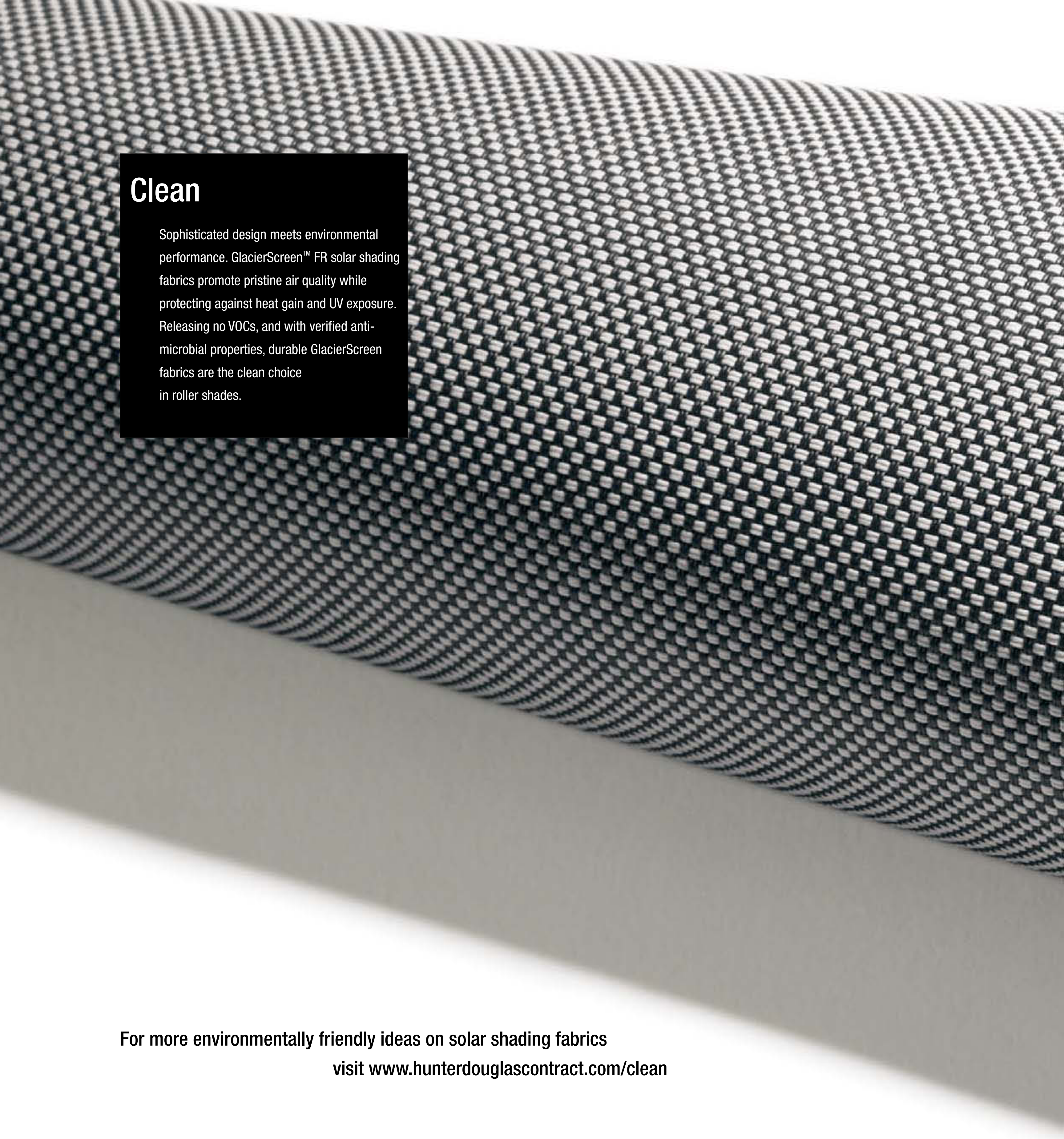

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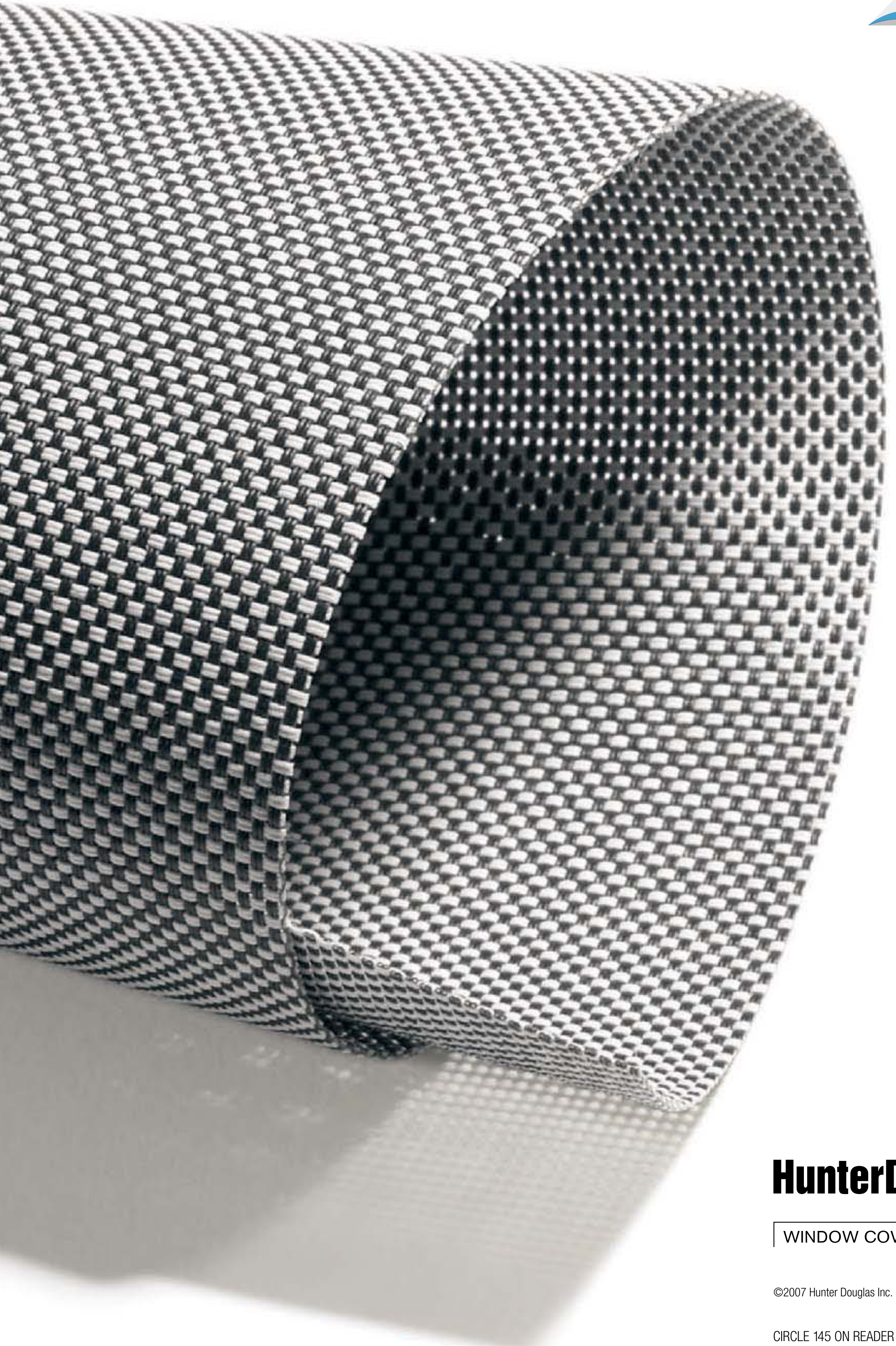

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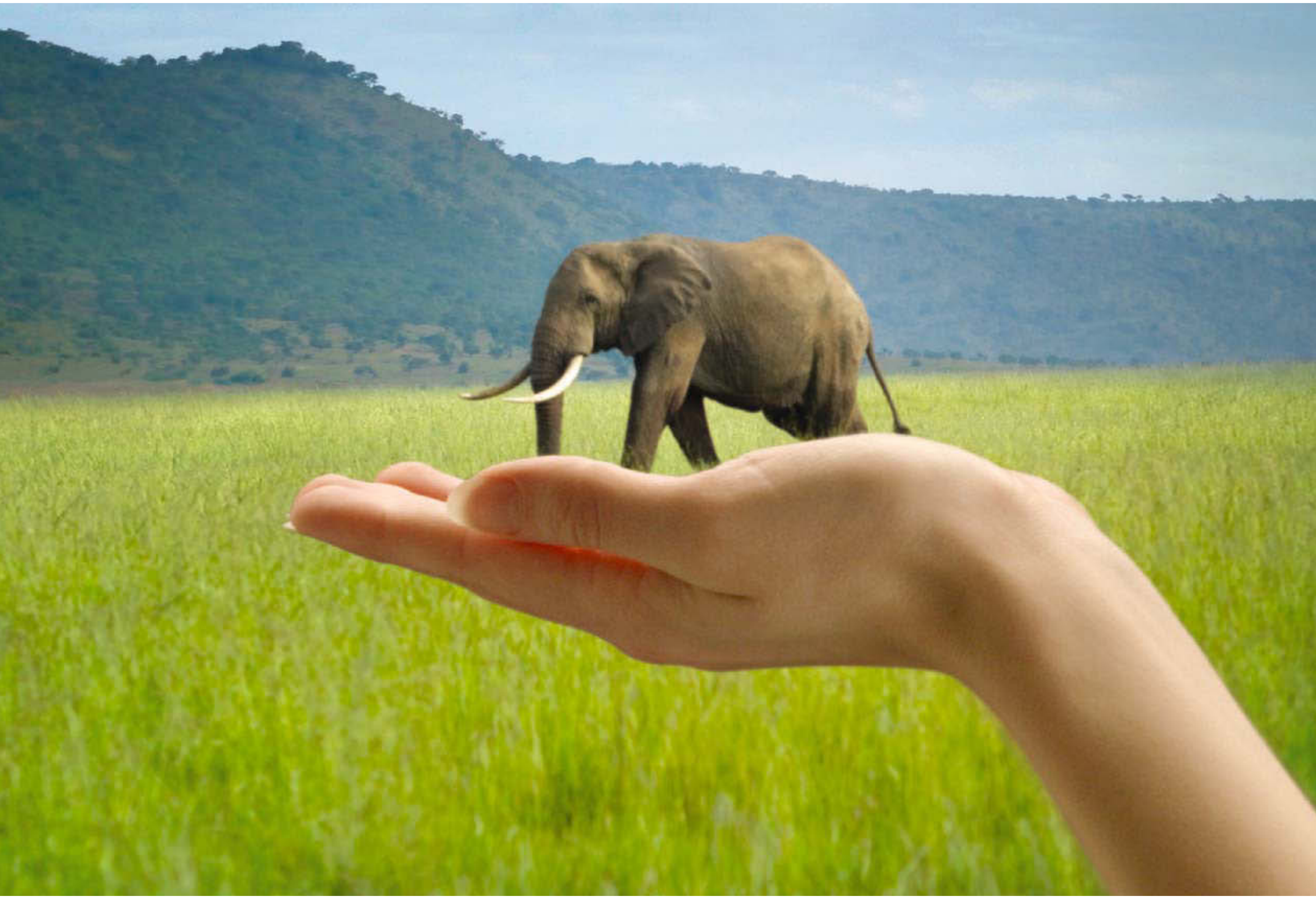

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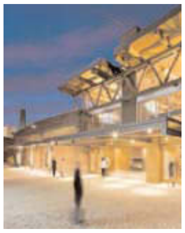
building types study: colleges and universities

Spending on athletic facilities is growing at North American colleges and universities, raising questions about who benefits and the role that design can play. Visit us online to see slide shows of projects by Gund Partnership (Kenyon Athletic Center, left), Gwathmey Siegel, Gould Evans, and others.



design awards

RECORD and its sister publication *BusinessWeek* present the winners of the 10th annual "Good Design Is Good Business" international competition. View slide shows of the projects, ranging from the striking Hearst Tower in Manhattan to the elegant Young Centre for the Performing Arts in Toronto (left).

archrecord interviews

View our online archive of interviews with architectural newsmakers and trendsetters, including Chad Oppenheim, Alexander Gorlin, Tom Kundig, Alan Maskin, and Annabelle Selldorf. New this month: video interviews with inventor Chuck Hoberman (curtain for 2002 Winter Olympics, left), product designer Gary van Deursen, and architect and activist Beverly Willis.

community

photo gallery

View nearly 2,000 images submitted by readers from all over the world in 10 categories, such as the Architectural Photographers Showcase (Notre Dame du Haut, above). You can also send us your own photos at construction.com/community/gallerylist.aspx.

blogs

Off the Record: Written by RECORD's team of experienced, award-winning editors. Read our in-depth coverage of the 2007 Innovation Conference, which drew more than 300 industry professionals, including British architect Sir Nicholas Grimshaw and Bill Mitchell, director of MIT's Design Laboratory.

forums

Your voice matters—and we have provided you with the ideal forum to express your ideas, suggestions, and gripes. Our discussion forums include such topics as Green Building Projects, Virtual Design, Practice Matters, and a forum for younger architects. You can also create your own discussion threads.

comments

"If I wanted to live at summer camp, I'd choose this design. Otherwise, this just doesn't work. I'm all about saving trees wherever possible, but even a good thing can go too far. This went way too far."

and more ...

residential: house of the month

A house in the Shenandoah Valley by Carter Burton Architecture (below) is designed with a clean, Modern aesthetic and simple materials. A neutral palette, clever ways to show art, open spaces, and unobstructed views make the home a comfortable, elegant retreat.

archrecord2

Meet architect David Yum, making his mark in New York and beyond (Leema Building arcade, Korea, below). We also explore Columbia University's Visual Media Center, a research lab examining visual data to make sense of complex environments like the city of Venice, Italy.

continuing education

Get CE credits by reading editorial articles and sponsored sections online. This month, our editorial opportunity explores the dizzying array of green-product certifications overwhelming the building industry. (Herman Miller's Celle chair, left, meets several green-product requirements.)

Photography (counterclockwise from top right): © Alma R. Radillo (Le Corbusier, Notre Dame du Haut); David Lamb (Kenyon Athletic Center); Tom Arban (Young Centre for the Performing Arts); courtesy Hoberman Associates (mechanical curtain for 2002 Winter Olympics); © Daniel Afzal (Shenandoah Retreat); courtesy David Yum Architects (arcade in Leema Building); Herman Miller International (Herman Miller Celle chair)

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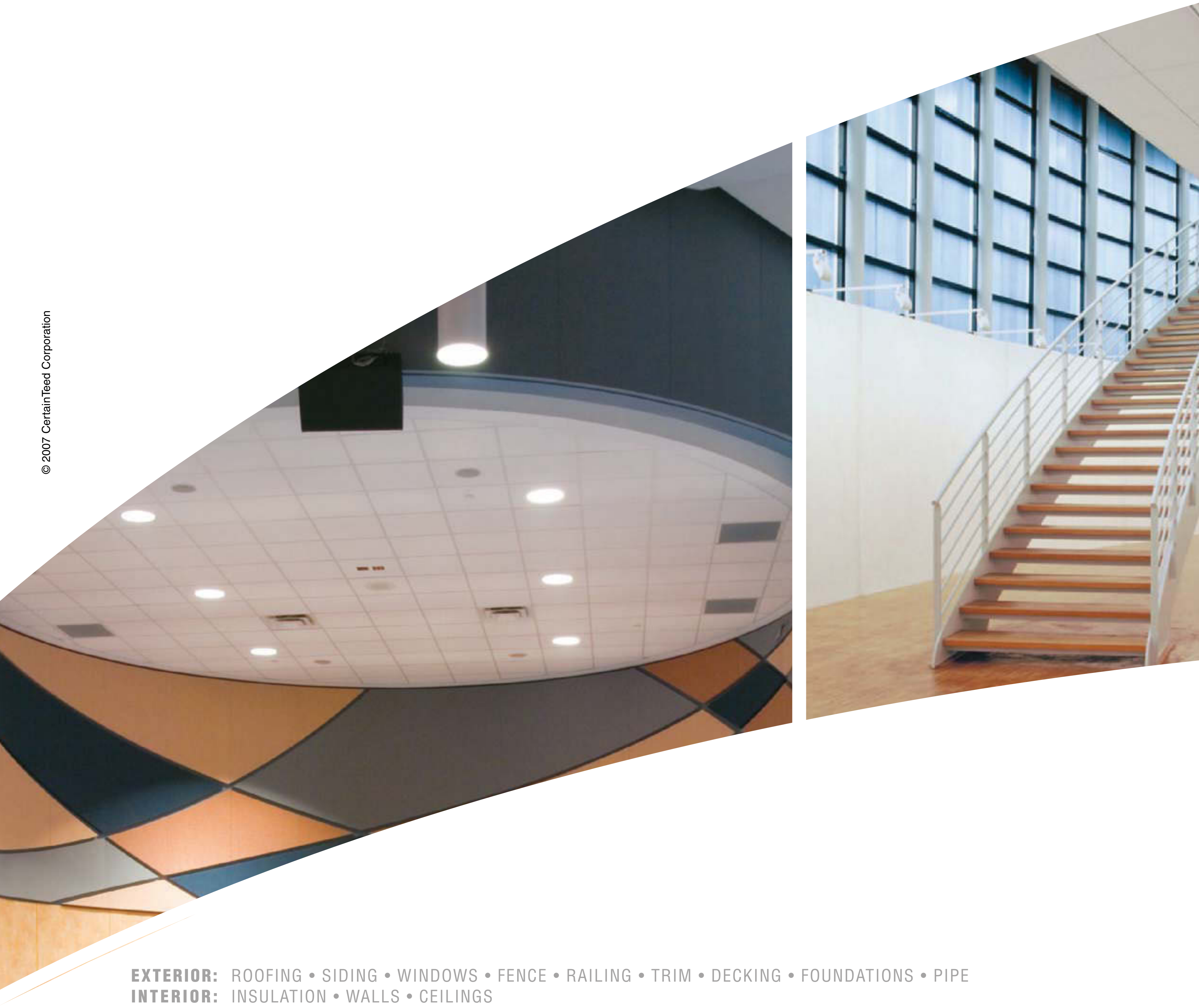

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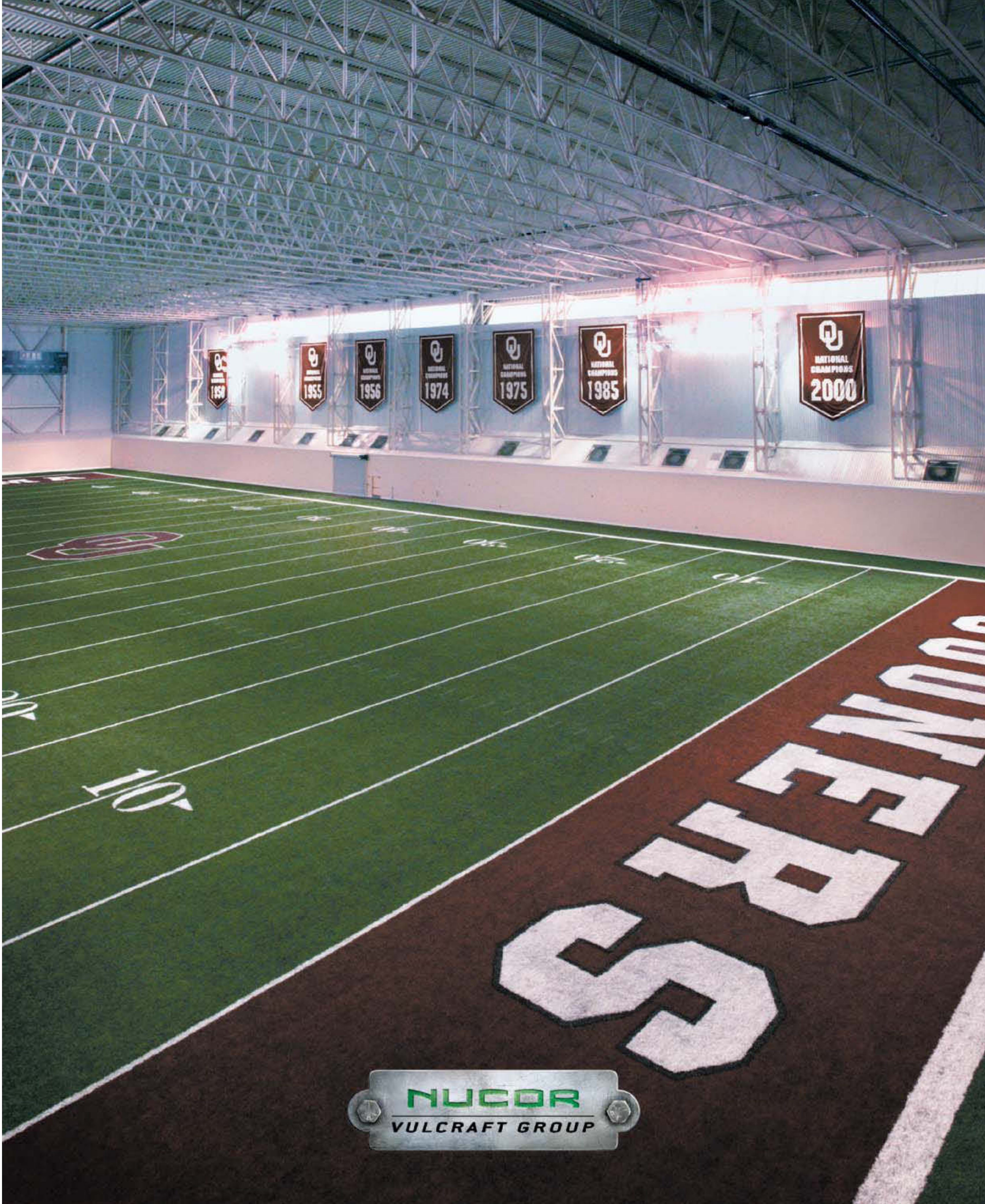
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Beyond legalisms

Editorial

By Robert Ivy, FAIA

Attribution keeps ARCHITECTURAL RECORD on its toes. Claims of responsibility and neglect remain fraught with conflict for our editors and the firms that we write about—the primary reason for unhappy e-mails to this publication. “Who” did “what”? As collaboration among teams has grown, with major trends pointing toward integrated design and project delivery, the number of actual team members has mushroomed, and keeping up with the parties responsible for the work on any given project now demands a database. With the slightest mislabeling or omission, we get the calls.

It should be simpler. Gone are the days when you could list the principal players on one hand: The architect, the structural engineers, the mechanical/electrical engineer, and a landscape architect to round out the team. Period.

No longer. As Suzanne Stephens pointed out last year in her article “Crowding the Marquee” [ARCHITECTURAL RECORD, June 2006, page 98], the permutations of legal attribution begin with parsing out the essential roles of the architects themselves. Today, we have design architects, architects of record, executive architects, joint ventures, and so on and so on. Superstars fly in from London or Amsterdam to work their design magic, then evanesce, leaving the local firm to work out the details and deal with construction. Today, more players are demanding more credit. Without proper recognition, the relationships can breed bitter feelings.

While structural engineers have achieved their own kind of fame (from the late Fazlur Khan to today’s Les Robertson or Guy Nordenson), today the more esoteric environmental engineers, such as Mathias Schuler or Atelier Ten, contribute to the conceptual framework of the entire project. Today, we don’t have to design buildings in an architectural void and then invite the engineers in: We design new kinds of interior spaces, or new types of exterior walls, based on the engineers’ initial framework.

In a world in which architecture and structure often integrate with and engage the land in three-dimensional, topological solutions, the conceptual language of landscape architects such as Diana Balmori or Michael Van Valkenburgh or Peter Walker, which breaks beyond the grid, can inform the total architectural design. Any engineer or landscape architect can make significant contributions to the idea of a building or a project, but they rarely get full credit. We know, because we hear their complaints.

Given the growing complexity of buildings, and the ambition of designers, the role of skillful craftspeople and manufacturers lapses into design work on its own merits. At our own Innovation Conference in New York in October, we heard from a roster of collaborators who are changing the way we think about architecture, such as Bill Zahner, whose metal fabrication firm, the A. Zahner Company, makes the forms envisioned in talented architects’ offices come to life. What tolerances can metal reach in bending? Without his firm’s thorough grasp of detail and material, the bravura projects in metal regularly featured in these pages might not reasonably see the light of day. Similarly, the work of James Carpenter, whose studio captures or refracts light in an architectural way, expands and enriches spaces with light. Consider the facade consultant Front, Inc.’s groundbreaking work. They make possible the see-through buildings that Mies van der Rohe dreamed of almost a century ago, now manifest in the dematerialized, sparkling work of firms like SANAA. Literally from dream to reality in a generation, but only with expert help.

Too often, the responsible parties effectively grab the spotlight when they fail to give proper credit by acknowledging “who” did “what,” whether intentionally or by mistake. Too often the smaller architectural firm or even the larger executive architect in the collaboration gets shoved to the corner of the Web page. Or is not invited to the grand opening, or recognized from the dais. How unpalatable and uncivilized for the more powerful, or more famous, or more media-hungry group to leave the little firm out of the limelight, yet it happens every day. As for the talented engineers, manufacturers, and specialists who help to make our best work possible, they get lip service in public forums, but are sometimes omitted from the list of contributors. Ask RECORD.

As a profession, we architects are capable of better. Anointed as team leaders, often in possession of the sole legal contract with our clients, we hold the keys to the correction. Currently, the rules and guidelines governing attribution are out of date and do not reflect contemporary reality. We need clear provisions for ethically acknowledging the entire team, a service that the national AIA can help steer us toward. In the interim, during these exciting days of innovation, when men and women are discovering new ways of turning our shared intellectual efforts into real materials, systems, and ultimately, architecture, we need to redouble our efforts. The watchword for all architects—in trust for all involved—should go beyond legalisms to what is fair.

Robert Ivy

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Letters

Fuel for the fire

B.J. Novitski's article "What's Fueling the Firm Mergers and Acquisitions Trend? Growth" [October 2007, page 75] correctly cites some key reasons for the recent consolidation within the architectural industry: growth, globalization, professional opportunities, leadership development, succession planning, and return on investment. Three additional forces shaping the current consolidation should be mentioned.

First, now that the oldest baby boomers are over age 60, more owners than ever are seeking to recoup the investments they have made in building their practices. Because of a dearth of architects in their forties with both a strong desire to assume the risks and long hours that accompany ownership and the financial resources to buy shares of a firm, current owners are increasingly looking at outside acquisitions as a more viable option than internal ownership transitions. Second, the demographics-driven talent shortage is leading many architectural firms to acquire other firms either to obtain skilled staff employed elsewhere or to broaden their recruiting base by expanding to new regions. Third, in the past decade, many clients are also consolidating, and the resulting larger client firms—among them healthcare organizations, corporations, housing developers, and retail organizations—are choosing to work with a smaller stable of architects that can provide local service in multiple locations.

It is indeed an interesting time in our industry. For years, midsize practices have been disappearing through mergers and acquisitions as we become a profession of large, national firms and small, niche firms. Now, with Hiller and RTKL sold to large European conglomerates, this trend is going global.

—Michael Strogoff, AIA
Mill Valley, Calif.

Hungry for more

Thanks for your editorial praising the Aga Khan Award program [October 2007, page 27]. I have been following it for many years. Perhaps we can expect more informative coverage in the future, since the limited two pages in the same issue's news section ["Aga Khan Award for Architecture 2007 winners named," page 39] merely whets our appetite.

—Tom Killian
New York City

Editor's note:

Look for further coverage of the Aga Khan Award program in 2008.

Original thoughts

Regarding the news story in your October issue about alleged plagiarism, "Sincere flattery or something worse?" [page 46], I think we need to be careful about jumping to conclusions when projects share similar characteristics. If the McQueen scheme is cited as a source of excessive "flattery" in the Beijing floating boathouse, why not also cite Piano's Zentrum Paul Klee, Calatrava's Ysios winery, Miralles's Santa Catarina Market, Fuksas's Milan trade-fair complex, or—forgive me for shameless self-promotion—my undulating roof for Rapid Central Station in Grand Rapids? Are all these cases of plagiarism, or merely cases of an architectonic collective unconscious?

There really are only a few platonic solids from which architectural forms derive, and—even considering subtractions, additions, collisions, and deformations—only a few wholly original ideas out there. Le Corbusier's Villa Savoye bears a superficial resemblance to the iconic Greek temple, the Doge's Palace in Venice, and the Imperial Villa in Katsura, not to mention countless vernacular stilt structures, yet it is often considered "groundbreaking." And it was, not principally because of its form but because of the skillful selection, distillation, and manipulation of received forms applied to a new era, a new culture, and a new way of living. The originality laid not so much in the choices but the reasons.

Let's be honest: an architect's work is largely collage, with all the inventiveness of that method of making. Let's not make it something worse.

—James VanderMolen, AIA
Grand Rapids, Mich.

Release the beasts

Thank you for including work by Kinya Maruyama, founder of Atelier Mobile [October 2007, The Architect's Hand, page 256], one of my favorite Japanese firms! I'd love to see some current projects by the ateliers that make up "Team Zoo" (especially Mobile, Zo, and Iruka). They continue to produce the best, most uniquely creative and diverse work in the world and have been "sustainable" since the late 1960s/early '70s, long before it was fashionable or understood.

—Amanda Winford
Austin, Tex.

Labor days

I am delighted to see RECORD making an effort to bring the critical social issue of "labor" in the United Arab Emirates to public attention [August 2007, Record News, "Blood, sand, and tears: Worker abuse alleged in the U.A.E.," page 33]. While I agree with the sentiment that international design firms have limited control over this matter, this should not absolve them of their ethical responsibility to uphold labor laws. Our profession can do a lot to alleviate some of the problems highlighted in the article. For example, for a large urban development such as Burj Dubai, as part of the design and construction package, the architect could propose off-site temporary humane labor housing that goes beyond overcrowded sleeping quarters to provide an environment that is favorable to the laborers' physical and mental health.

Over the past decade, the awareness of this issue has encouraged policy makers in the region to enforce the minimum housing standards, but there is still room for improvement. Public awareness and education of our architecture students about this issue is critical.

—Mehdi Sabet
American University of Sharjah
United Arab Emirates

PC not PVC

In the midst of concerted efforts from the AIA and the profession to embrace design principles that are beneficial to the environment and building occupants, I am frustrated to see featured projects that seemingly snub their nose at such concerns. Your article about the Asymptote Architecture–designed Alessi Flagship store [September 2007, page 138] is a prime example. While the project is eye-catching, the article highlights the vinyl wall coverings, PVC shelving, poured epoxy flooring, and a heavy drenching of artificial illumination.

Small, innovative design projects should not be given a free pass when it comes to sustainability and occupant health standards. While it would be unrealistic to expect a sustainable scorecard identifying the pros and cons of each project, such a system could be employed when deciding what projects merit the spotlight in the well-read pages of ARCHITECTURAL RECORD each month. —Aaron Binkley
Cambridge, Mass.

Send letters to rivy@mcgraw-hill.com.

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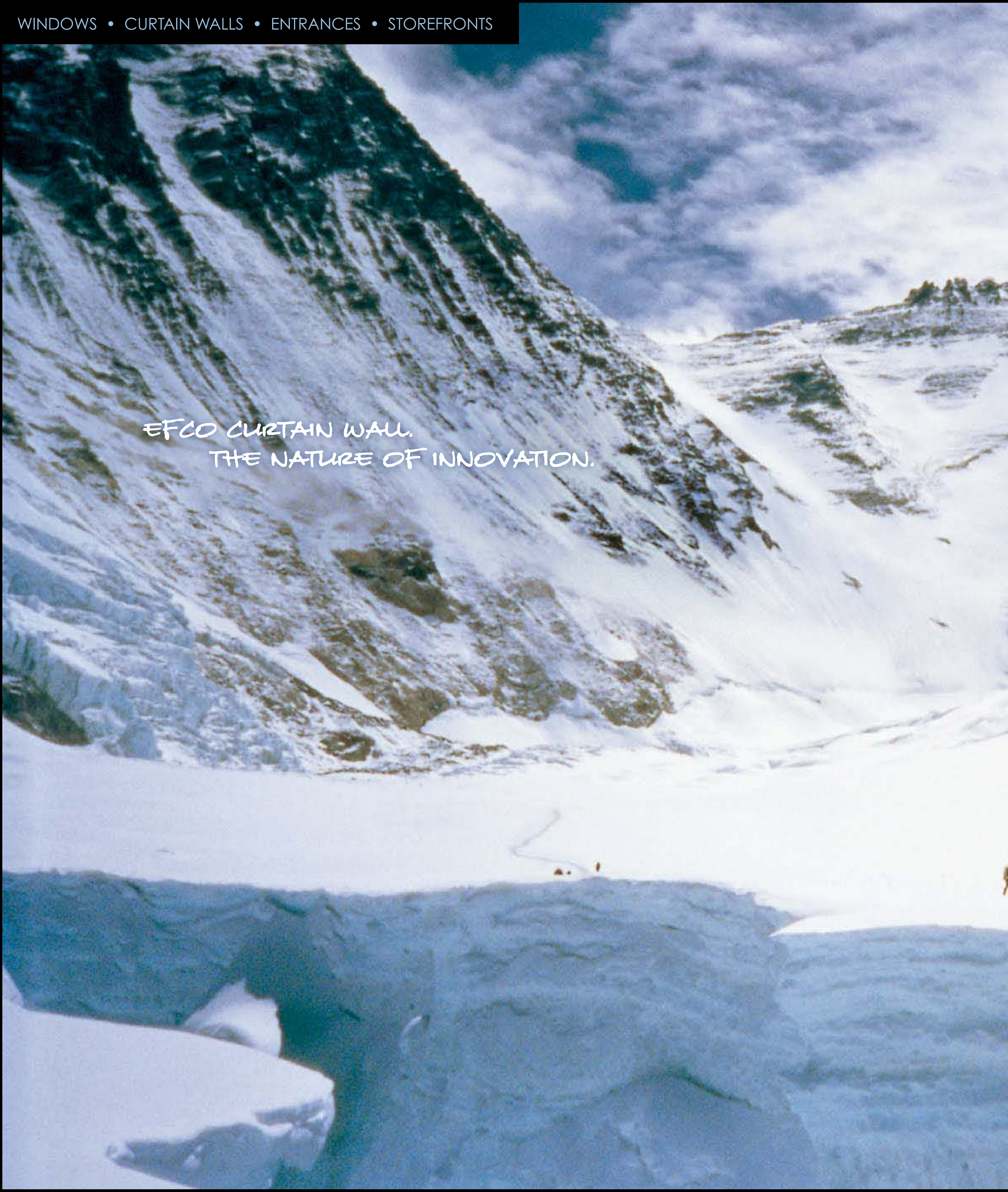
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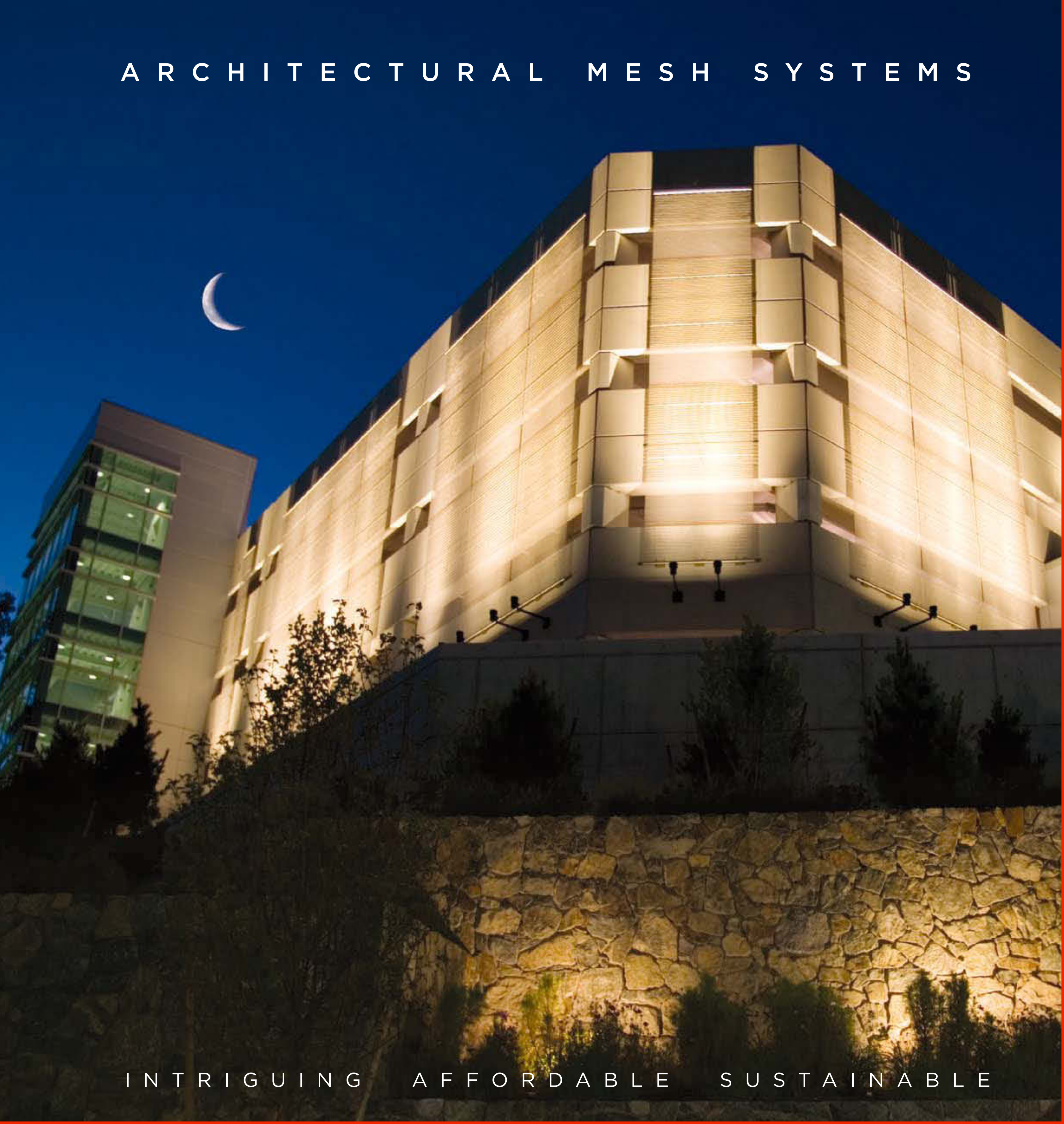
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Record News

Inside the News
p.36 **Kisho Kurokawa dies**
p.40 **Pei and Marino suite rents for $30k/night**
p.49 **Should architects self-certify their plans?**

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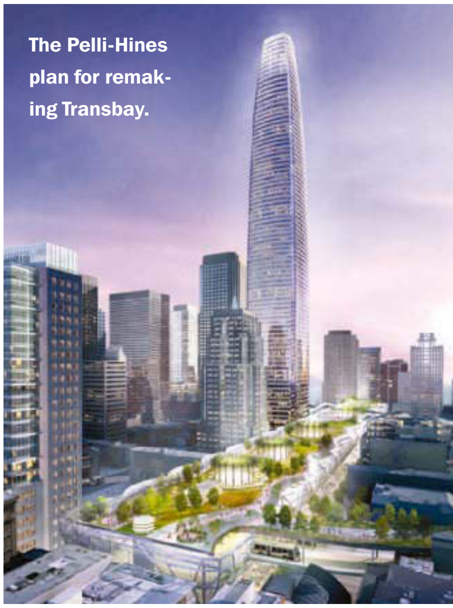
Pelli-Hines team picked for Transbay


The Pelli-Hines plan for remaking Transbay.

Transbay won't rise as high as his Petronas Towers in Malaysia, but Cesar Pelli and his firm have won the rights to design what could become the tallest tower in San Francisco. Pelli Clarke Pelli Architects, teamed with developer Hines, were awarded exclusive negotiating rights on September 20 to a site in downtown San Francisco owned by the Transbay Joint Powers Authority (TJPA), which seeks to rebuild the aging Transbay Terminal nearby.

Pelli's design is for a 1,200-foot-tall, obelisklike tower of glass and steel alongside a new structure for buses and commuter rail near Mission Square. The revamped terminal, stretching ¼ mile and crossing above two streets, will be topped by a 5.4-acre park, designed by Peter Walker and Partners, of Berkeley, California, to emulate several of the state's varied landscapes.

The Pelli scheme, and Hines's $350 million bid for the site, triumphed over two rival entries. Skidmore, Owings & Merrill teamed with Rockefeller Group Development in proposing a 1,375-square-foot, torqued tower—narrow at its base, slender and diaphanous at the top—along with a terminal entered through a glassy hall. Rogers Stirk Harbour + Partners worked with SMWM and Forest City Enterprises on a plan that set an airy terminal alongside an Erector Set–like glass tower topped by an enormous wind turbine.

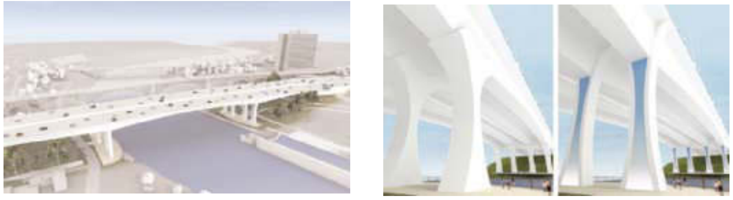
The competition stirred intense public interest. Since early August, when models and design boards were unveiled, TJPA received nearly 900 public comments. Although many people favored SOM's tower, designed by Brian Lee of the firm's San Francisco office, the jury unanimously recommended the Pelli-Hines proposal to TJPA's board, which made the final decision. Jurors especially liked the park, saying it transformed the rooftop into "a living, breathing, urban organism." And the low-key high rise, they added, "is timeless and fits in San Francisco." The nine-member jury included four architects: Robert Campbell, FAIA, a contributing editor of RECORD; Hsin-Ming Fung, AIA, of Hodgetts + Fung Design and Architecture; Oscar Harris, FAIA, with Turner Associates Architects and Planners; and Allison G. Williams, FAIA, with Perkins + Will.

WRNS Studio, of San Francisco, and Kendall/Heaton, of Houston, will assist Pelli in preparing final designs. The team has much work ahead—starting with the fact that it's still unclear what size tower will be allowed on the site, which is currently zoned for 550 feet. San Francisco's planning department is in the early stages of studying whether or not to allow for taller buildings in the Transbay district. *John King*

I-35W contract awarded, designs unveiled

The Minnesota Department of Transportation awarded a $243 million contract for rebuilding the I-35W bridge in Minneapolis to a team including Flatiron Constructors, based in Longmont, Colorado, in joint venture with Seattle-based Manson Construction. Also on the team is Orlando-based Johnson Bros., in a support role, and Figg Bridge Engineers, of Tallahassee, Florida, as lead designer. The new bridge will replace one that collapsed on August 1, killing 13 people and injuring 100.

Flatiron-Manson project manager Peter Sanderson said at a press conference on October 8 that the team hoped to start work on the new St. Anthony Falls Bridge, as it is called, by November 1 and complete work by Christmas Eve 2008. The 1,216-foot-long, 10-lane concrete bridge will feature a 504-foot-long precast segmental main span clearing the Mississippi River. Designed with a 100-year life, it will support the main span on four 70-foot-tall piers supported on multiple drilled shafts into bedrock. Figg president Linda Figg said that there will be "no fracture-critical members" in the redundant design. Each of the twin bridges will be 90 feet 4 inches wide, allowing room for future bus rapid transit or light rail.


Only the pier designs (right) differ in two options for a new I-35W bridge (left).

According to the proposal, the main span precast segments will be placed by a barge-mounted crane, while the 330-foot-long and 260-foot-long connecting continuous concrete spans, as well as one 121-foot-long end span, prestressed and post-tensioned, will be erected on falsework. The proposal also includes a state-of-the-art sensor and monitoring system and the possibility of monumental markers at the entrances on either side.

Community participants in a one-day design charrette workshop scheduled for late October were to choose from two pier options—one in which the pier columns taper outward at the tops and bottoms and flow into the curvature of the main span, or one with straighter piers with blue coloring along their lengths. They were also to chose between a white and sandstone coloring for the overall bridge, the types of railings, and the types of LED lighting.

Most of the components of the concrete bridge outlined in the Flatiron-Manson and Figg proposal will be built in Minnesota using local materials and workers, Sanderson said. *Aileen Cho*
[A version of this story first ran in *Engineering News-Record*.]

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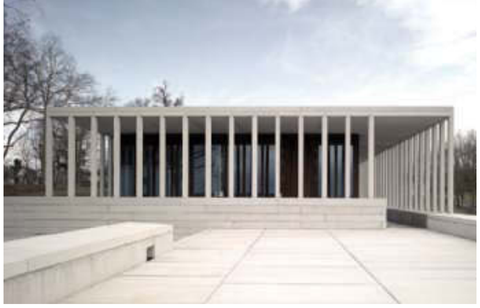
Chipperfield wins Stirling, Cullinan nabs Gold


David Chipperfield's Museum of Modern Literature.

The Royal Institute of British Architects (RIBA) awarded the 2007 Stirling Prize last month to David Chipperfield Architects' Museum of Modern Literature, in Marbach am Neckar, Germany. The honor is bestowed upon the building deemed the year's greatest contribution to British architecture. Although the winner was not entirely a surprise, oddsmakers had favored Chipperfield's America's Cup Building in Valencia, Spain, to prevail among the six semifinalists.

RIBA has awarded the Stirling Prize, named in honor of the late British architect James Stirling, since 1996. Chipperfield's Museum of Modern Literature was built as a symbol of German reunification, bringing together texts that had been separated during the country's partition. The other Stirling semifinalists were the Casa da Musica, in Porto, Portugal, designed by Office for Metropolitan Architecture; the Dresden Station Redevelopment, in Dresden, Germany, by Foster + Partners; The Savill Building, in Windsor, England, by Glenn Howells Architects; and the Young Vic Theatre, London, by Haworth Tompkins. Although only RIBA members are eligible to enter, buildings may be located anywhere within the European Union.

The winner of RIBA's other top award, the 2008 Royal Gold Medal, was announced as Edward Cullinan—the first time a British architect has won since 2002 and only the fourth time a Briton has been so honored in the 20 years that RIBA has given the medal, which recognizes lifetime achievement. The 76-year-old Cullinan is a pioneer of sustainable design. His projects include the Fountains Abbey Visitor Centre, the Cambridge University Centre for Mathematical Sciences, and the University of East London Docklands Campus. Cullinan's most recent building, completed in 2002 near Chichester, is the Weald Downland Gridshell. *James Murdock*

Kurokawa dies at 73

For admirers of the Japanese architect Kisho Kurokawa, his death on October 12 at the age of 73 ended a year of disappointments. In April, he lost an election bid for the governorship of Tokyo; in July, he and his wife, actress Ayako Wakao, were unsuccessful in their campaigns for seats in Japan's Upper House of parliament. This spring, plans were announced to raze his Nakagin Capsule Tower, in Tokyo, an icon of the Metabolism movement built in 1972.

Kisho Kurokawa

Recent events would seem to suggest that Kurokawa had lost a receptive audience, but his work remains remarkably prescient. He was involved with Metabolism during the 1960s and later Symbiosis—precursors to the contemporary trends of prefabrication, sustainability, and biomimicry.

Kurokawa was indoctrinated into the Metabolism movement as a student under Kenzo Tange at the Graduate School of Architecture, Tokyo University. The group's practitioners, who included Fumihiko Maki and Arata Isozaki, were influenced by scientific observation of cellular growth and biological structures; they argued that buildings and cities could be designed as adaptable organisms or flexible frameworks comprising replaceable parts.

Nakagin Capsule Tower provocatively encapsulated these insights, with modular units clipped onto the building's 11- and 13-story tower cores: Kurokawa imagined that, to accommodate changing urban conditions and new expressions of culture, these modules would be switched out every few decades. He deployed these principles again with the Sony Tower, completed in 1976.

As his career progressed, Kurokawa's perspective evolved into a group of concepts that he dubbed *Symbiosis*. Although these insights were largely reserved for the printed page—many of his atelier's later projects, such as the National Art Center in Tokyo's ritzy Roppongi district (see page 142), are beautifully executed works of architecture rather than realizations of theory—Symbiosis did find one of its fullest expressions in the Kuala Lumpur International Airport, in Malaysia, finished in 1998. Merging thought and practice, the airport is surrounded by a large man-made rain forest and was intended as one component of a larger ecocity within Kuala Lumpur. *David Sokol*

Remembering Herbert Muschamp, 1947—2007

From his first book in 1974, *File Under Architecture*, Herbert Muschamp was a fixture in our sky of thought—and then, suddenly, after a surprisingly short bout with lung cancer, he was no longer there: He died on October 2, at the age of 59. Whether you loved or hated his musings, you never put his articles in a pile for tomorrow. The pieces were like Herbert himself: penetrating, maddening, insightful, delightful, capricious—sometimes in the same paragraph. He practiced unpredictability as a tool of intellectual provocation.

Herbert Muschamp

An autodidact, Herbert avoided donning the mask of objectivity, instead inviting the reader into a near stream of consciousness. He kept his readers company, and if you liked the company, you liked the piece. Some did not. The point was not ego but principle: Herbert established his identity as a matter of intellectual honesty. He put into practice his own version of gonzo criticism, first for *The New Republic* in 1987, and then for *The New York Times* in 1992. He always refreshed those pages, puncturing and exiting the space of the publication to enter the space of the reader. Embedding himself in the field, he eventually moved from being a critic in the audience to becoming an actor on stage.

Herbert weighed in on the Edward Durell Stone building on Columbus Circle too late. He produced alternately brilliant and arbitrary opinions on Ground Zero. He went AWOL on New York's waterfront. Prejudiced, like all critics, he overlooked major buildings by prominent architects because of his tribal affinity to the avant-garde. And in many articles, he never quite got around to discussing the building and plan.

Famously, and infamously, Herbert once equated Frank Gehry's Guggenheim to Marilyn Monroe in her billowing white dress. He explained they both had an American sense of generosity and spirit. They were wild. But Herbert was the elephant standing unspotted in his own article, the third point in the trinity. He was the Guggenheim and Marilyn both—intuitive, exhibitionistic, eccentric, mercurial, fearless, and urgent. *Joseph Giovannini*

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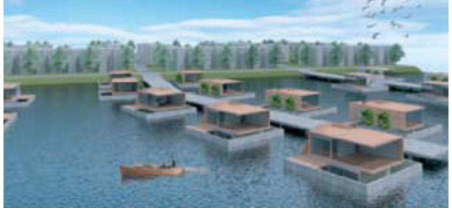

Floating concrete boxes could provide house lots.

Dutch architects imagine a waterworld future

The Netherlands' obsessive relationship with water dates to the construction of the first polders in the Middle Ages. But only in recent decades have Dutch designers and engineers considered coexisting with water, rather than holding it back. In De Groote Wielen, halfway between Amsterdam and Maastricht, a new 4,300-unit residential development called Watertuinen will include an artificial lake filled to a depth of 14 feet with diverted rain and river water. In addition to shorefront residences, the project includes 40 houses partially submerged in the lake itself. Although construction has yet to begin, these so-called "Waterholes" are proving popular: The waiting list has topped 200 people.

Waterholes are not to be confused with houseboats bobbing on the lake's surface, says Maxim Winkelaar, who, with Bob Ronday, won a competition sponsored by the Bosch Architecture Initiative and the Dutch Union of Architects to design this component of the development. The pair proposed constructing a 1,550-square-foot concrete box that displaces lake water to a depth of 5 feet, creating a "hole" that nevertheless floats on the lake. Each box serves as the house lot into which a slimmer, two-story dwelling volume is inserted. Ground-floor bedrooms, a lavatory, and an outdoor garden will be mostly hidden by the box's concrete walls. Upstairs, the kitchen and public rooms will float slightly above the water line, with an adjacent terrace that can serve as a boat dock; the rooftop will offer additional outdoor living space. Sewage and electricity connections will be housed in flexible, waterproof piping, and the toilets will be flushed with recycled graywater.

Winkelaar and Ronday say the design can be adapted to a wide variety of conditions. Waterholes could settle or float according to seasonal variation in the water level of rivers—and should waterfront towns in Holland or other nations lose the fight against rising sea levels, they could become commonplace. *David Sokol*

NOLA housing gets a high-profile boost

Who's snickering about Brad Pitt's interest in architecture now? The movie star jolted attendees at the Clinton Global Initiative's conference in September by announcing plans to replace 150 destroyed houses in New Orleans's Lower Ninth Ward with new, environmentally sustainable ones that cost less than $200,000. He has formed a group called "Make It Right" to hire 13 architects for green designs that fit the local vernacular. Each model will match what residents want to see with what engineers need to provide to protect against climate change and future floods. "Our goal is to bring green technology to the affordable level and not have it look like a Prius," Pitt said. When attendees laughed nervously, he added, "I own two of them, it's all right."

Graft, a Los Angeles firm, collected prototype proposals and serves on the design-review team. Louisiana-based Billes Architecture, Concordia, Eskew+Dumez+Ripple, and Trahan Architects submitted designs, as did Adjaye/Associates, BNIM Architects, Constructs, KieranTimberlake Associates, Morphosis, MVRDV, Pugh + Scarpa Architects, and Shigeru Ban Architects. James Timberlake, of KieranTimberlake, says that each house will total less than 1,000 square feet and stand 5 to 8 feet above ground to protect against floods. He adds that Make It Right is putting residents' priorities first in developing designs: "This is an attempt to rebuild a neighborhood in a way that copycat homes couldn't."

Pitt told the Clinton audience that he hopes to break ground on at least one house by the end of 2007. He and film producer Steve Bing will match $10 million in sponsorships toward this goal. *Alec Appelbaum*

Risky business: Oslo ponders creativity, remakes port

Norway occupies an enviable position: Flush with cash thanks to oil deposits, it enjoys universal health care, low unemployment, and a steadily decreasing average number of hours worked per capita. Decorating one's weekend getaway cottage is a national pastime. The dampening effect that this cushy lifestyle might have on creativity has prompted soul-searching amongst Norway's architecture community, indicated by the theme of the 2007 Oslo Triennale, "Risk." It began with a symposium in September; an exhibition runs until November 17.

The Triennale was curated by Gary Bates, a Delaware native who cut his teeth with OMA in Amsterdam before establishing his own practice, SpaceGroup, in Oslo. During the eight years since, Bates has won increasingly high-profile commissions. His firm is collaborating with REX, the New York City OMA spin-off, on the Deichmanske Library and Stenersen Museum, a 3-million-square-foot cultural complex to be located just behind the Nobel Peace Center in the heart of Oslo's harbor. Just west of it, SpaceGroup is designing the redevelopment of Filipstad, a 74-acre container port, into a neighborhood with 6 million square feet of offices, residences, hotels, and parks.

The National Opera House (left); Filipstad (above).

The waterfront on Oslo's east side is also undergoing regeneration. The city is burying a highway and in its place welcoming new offices and hotels. The project's anchor is nearly finished: Snøhetta's new National Opera House. For a country that worries it might be risk-averse, this $614 million, 387,500-square-foot performing arts center makes a bold statement. Its marble-clad roof rises from the waters of Oslofjord, forming a ramp on which visitors may walk, wrapping around the lobby and fly tower, then down again, so that it resembles a snow field punctuated by a rocky outcropping. It's fine if visitors make that visual association, says Snøhetta's Kjetil Thorsen, but no symbolism was intended: "The space touches the water and the sky, but it's its own thing."

Although the Opera House opens next April, 15,000 people previewed its exteriors one day in September. A group of blind persons objected that the roof presents a safety hazard, but Thorsen takes such criticisms in stride. After all, he admits, it's doubtful that one could realize such a risky public building in an overly litigious country such as the United States. *James Murdock*

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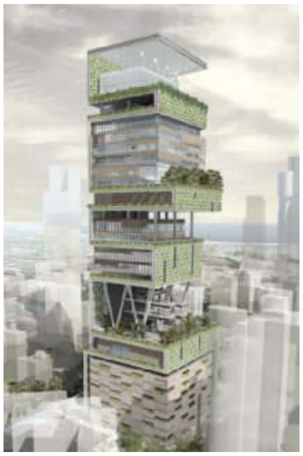
Perkins + Will debunks Antilia myths

Construction is under way, albeit with some delays, on one of India's highest-profile and most opulent projects—the Antilia, a 490-foot-tall corporate meeting facility and private residence in Mumbai. Chicago-based Perkins + Will designed the 24-story tower for business tycoon Mukesh Ambani, whose family will occupy roughly 35,000 square feet on the top floors.



Vertical gardens wrap Antilia.

It seems fitting for a building named after a mythical island that rumors have spread about the exact program of Antilia since a local newspaper first published renderings of it earlier this year. Ambani, the chairman of petro-giant Reliance Industries, has a net worth estimated at more than $21 billion. Some accounts falsely said the tower will rise 60 stories and the Ambani family would occupy it all.

"There's been a lot of crazy things floating around," says Ralph Johnson, Perkins + Will firmwide design principal, "but there's actually a lot of positive things to talk about, because it's an interesting building."

Among its interesting elements, Antilia features a band of vertical and horizontal gardens that demarcates the tower's different program elements. A midsection garden separates parking and the conference center from the residence above, and the outer walls on certain levels will be sheltered by trellises supporting panels of hydroponically grown plants. Johnson says that these vertical gardens will help shade the building and reduce the urban-heat-island effect. "You can use the whole wall almost like a tree and increase the green area of the site by five or 10 times over what it would be if you just did a green roof. It's a prototype for buildings of the future."

Construction on Antilia reached the midsection garden but was halted this summer after a land dispute. Although the delay is expected to be temporary, many Indians nevertheless feel that the residence flaunts the country's socialist sensitivities—the building occupies a 1-acre site on Altamount Road, where real estate prices top $1,000 per square foot. Others, though, praise Antilia's efficient use of land. *Neelam Mathews, with additional reporting by James Murdock*

Downsize me! Shrinking the McMansion diet

The McMansion phenomenon is likely to survive the residential property slump and the popularity of green design, but communities are increasingly opting to regulate house size. The National Trust for Historic Preservation tracks the issue through its anti-teardown initiative. In 2006, it found that more than 300 communities in 33 states had taken steps such as imposing demolition delays, limiting square footage, and creating conservation districts.

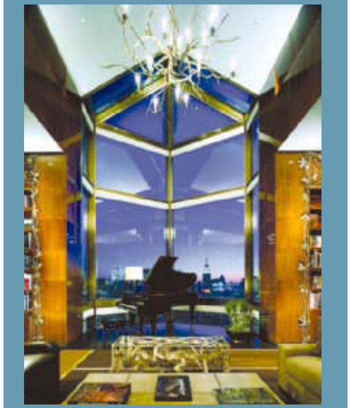
Among the more innovative measures, Boulder County, Colorado, is creating a quasi cap-and-trade scheme. The county's median house size ballooned from 3,881 square feet in 1990 to 6,290 square feet in 2006—more than twice the national average size and growth rate during that period. "We have seen a dramatic increase in the number of extraordinarily large additions, scrape-offs, and rebuilds," says Michelle Krezek, Boulder's manager of special projects. A proposed "transferable development rights" plan would require homeowners and developers hoping to exceed 6,500 square feet in the flatlands, or 4,500 square feet in the mountains, to buy credits either from a county clearinghouse or from the owners of properties that remain under the caps. Pricing and other details are still undetermined; the county's planning commission will take up the matter in early 2008.

Proponents say that while Boulder's plan avoids setting a limit on the total amount of development countywide, it creates disincentives to build big. But the untested market system has its skeptics. "As house prices go up, people who sell their credits might regret it," says Lane Kendig, author of an American Planning Association report on regulating home building. "The house won't be expandable, [but] what if I have another kid and need the space?" Krezek replies that the plan could allow credit buybacks in some cases.

Communication is often key to successful size regulations. In 2001, the city of Palo Alto, California, which had already capped house size at 2,550 square feet on a 6,000-square-foot lot, added a design review that looks at streetscape impact, abutters' privacy, and other factors. Neighbors are notified of permit applications and the process is open to public comment. "If you can have neighbors working together, it helps the design review," says Curtis Williams, the city's assistant director of planning.

Some experts recommend that planners combine caps with sustainability and historic preservation codes. Regardless of the approach, Kendig says, current real estate conditions provide an opportunity: "Get some regulations in place. It's easier now when nobody can move their houses." *Ted Smalley Bowen*

Hotel room with a $30,000 view?



When the Four Seasons Hotel New York opened in 1993, architect I.M. Pei wasn't entirely satisfied—budget limitations kept him from creating the swish penthouse he envisioned for the 52-story, limestone-clad tower. But shortly after Ty Warner acquired the property in 1999, he enlisted Pei and New York-based Peter Marino to create a crown jewel befitting the city's tallest hotel. Seven years and $50 million later, mission accomplished. In July, the hotel unveiled its new 4,300-square-foot penthouse suite with nine rooms, ceiling heights up to 25 feet, and breathtaking city views. Marino designed the sumptuously appointed interiors, which feature walls dressed in book-matched Chinese onyx; closet doors wrapped in buttery leather; and a 4-foot-tall, fiber-optic chandelier made of glass chards. Pei's contribution includes four glass terraces that float 700 feet above the street. At $30,000 a night, the suite is reportedly the world's most expensive. It's been booked only four times so far, but a hotel spokesperson says that's exactly the idea: "We want to keep the exclusivity and maintain the pristine condition of the room." (Visit architecturalrecord.com/news/ for more photos.) *Jenna M. McKnight*

IMAGES: COURTESY FOUR SEASONS HOTEL NEW YORK (RIGHT); PERKINS + WILL (LEFT)

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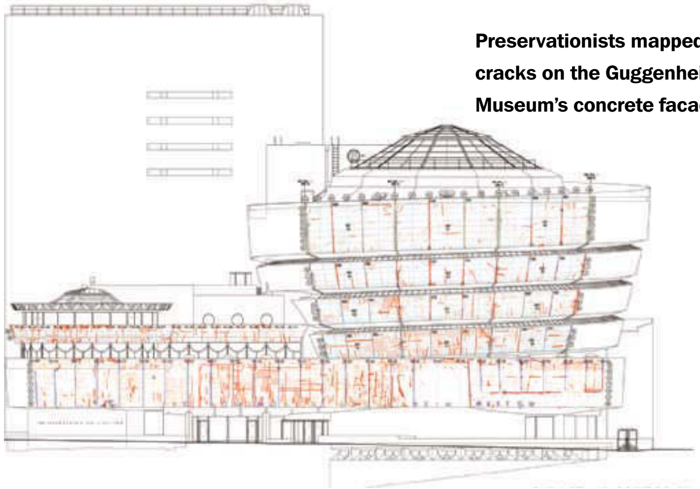

Preservationists mapped cracks on the Guggenheim Museum's concrete facade.

IMAGE: WANK ADAMS SLAVIN ASSOCIATES/STUDIO A/© THE SOLOMON R. GUGGENHEIM FOUNDATION

Guggenheim restoration has Wright stuff

Frank Lloyd Wright pushed the limitations of technology with his buildings, sometimes exceeding them and bequeathing problems to future stewards. Fallingwater, the Edgar J. Kaufmann, Sr., residence completed in 1939, required a major restoration in 2002. The house's dramatic cantilevers had deflected dangerously, with the main cantilever sagging an alarming 7 inches. The restoration team, including structural engineer Robert Silman Associates (RSA) and architect WASA/Studio A—formerly Wank Adams Slavin Associates—were able to halt the deflection with post-tensioning cables, a solution as innovative as Wright's design.

RSA and WASA/Studio A have partnered again, along with Integrated Conservation Resources, to repair and restore another Wright icon, the Solomon R. Guggenheim Museum in New York City. For two years, the team has undertaken a comprehensive investigation and assessment of the 50-year-old exterior and its infrastructure, focusing on the gunite-covered concrete envelope.

The restoration team removed 11 coats of paint from the exterior, revealing hundreds of surface cracks. Then a 17-month monitoring effort began, which measured localized movements of cracks and overall wall movements. Laser modeling and core drilling to gather concrete samples showed that the building remains structurally solid. After extensive laboratory and accelerated weathering testing, mock-ups of proposed crack fillers and patching materials were monitored through seasonal changes to verify compatibility and performance.

Wright designed the structure without expansion joints in order to create a visually monolithic form. And yet, despite the cracks, its concrete was found to be in remarkably good condition. Credit for such stamina goes to the use of an early version of what is now called elastomeric wall coating—a thick, elastic paint—in its infancy in the 1950s, a perfect example of Wright's continuous search for new methods and materials. The restored facade will be coated with a high-performance contemporary elastomeric paint.

The restoration team's biggest challenge centers on the interior side of the envelope at the top of the rotunda. The wall of the sixth ramp is twice the height of the spiral's lower ramps and has a different slope. A thorough investigation showed that a difference in geometry meant that the top walls expanded and contracted at different rates. The engineers designed custom steel brackets to reinforce localized discontinuities and applied a carbon-fiber matrix to the interior side of the walls to provide resistance to thermal and wind loads.

In restoring any architectural icon, the goal is to preserve the authenticity of craftsmanship and to make sure the intervention doesn't preclude future restoration. "We strive to make our interventions reversible, but because of the scale of buildings, that is not always possible," says Pamela Jerome, AIA, a partner at WASA. "If we can't achieve reversibility, we at least make sure that our interventions don't preclude re-treatment."

The project's total budget is $29 million. Scaffolding will remain in place through spring 2008. The museum is expected to remain open throughout the work. *Sara Hart*

National chains rattle Jane Jacobs's ghost

In counterpoint to a series of Robert Moses retrospectives earlier this year, New York City's design mavens are revisiting Jane Jacobs, whose writings about urban life came to symbolize the opposite of Moses's own approach to planning cities. Manhattan's Municipal Art Society (MAS) is using the late community organizer and theorist as the touchstone for an inquiry into New York City's current character.

Jacobs made her name in the early 1960s by helping organize a grassroots campaign to protect historic buildings and neighborhoods from destruction—most notably Greenwich Village, which lay in the path of an expressway Moses sought to build. The MAS show *Jane Jacobs and the Future of New York*, which runs until January 2008, invokes this history to rouse a new generation of community activists. The organization is hoping for a similar effect from a series of seven talks that began on October 3 with a panel provocatively titled: "Is New York Losing Its Soul?"

When panelists talked of "soul," they seemed to yearn for variety across neighborhoods. Rocco Landesman, a Broadway producer, bemoaned a "delibidinization" of the cityscape in which generic national chains displace small businesses and even strip clubs, their factory-produced marquees and bland facades looking eerily similar to banks. Novelist Tama Janowitz spoke wistfully of the days when clerks at the bodega on her block offered to deliver marijuana—now they sell gourmet oatmeal. And Darren Walker, a vice president of the Rockefeller Foundation, proposed government policies to protect independent retailers. "I want Lenox Avenue to look like Lenox Avenue," he said, describing a Harlem thoroughfare now chockablock with national chains.

Panelists discussed architecture's role mainly in terms of building height. Moderator Clyde Haberman, a columnist for *The New York Times*, questioned a current city policy that lets developers build taller in exchange for including affordable housing or public space in their projects. This policy has spurred striking designs from veteran designers such as Frank Gehry, and rising stars including Enrique Norten—many of whom have not worked in New York before. But panelists worried that such development is making ground-floor rents too expensive. Alison Tocci, the president of *Time Out New York*, declared: "If Mayor Bloomberg were as aggressive about supporting small individuals as he is about big developers, there might be a better balance." Touching on this point, an audience urged city-planning officials to "stand for the interests of a broad range of people, not just developers." Timothy Mennel, project manager of the MAS show, said afterward that the city's Parks Department relies on charrettes and input from civic groups to guide its efforts. But parks, he added, were not Jacobs's battleground—they were Moses's original domain.

Future panels, which run through December, will consider how blogging, university expansions, and gentrification—all functions of a digital and global economy—affect the cityscape. *Alec Appelbaum*

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Should architects be allowed to self-certify building plans?

Just as other cities around the country are experimenting with ways to streamline the plan-review and permit process, New York City, a trendsetter in this respect, is clamping down on its practice of allowing architects to self-certify building plans.

To save architects time, Los Angeles has unveiled the Guaranteed Express Permit Program. It serves walk-in customers with small projects within 30 minutes and issues a permit within 90 minutes or the application is free. In Honolulu, the city's Department of Planning and Permitting is allowing architects to retain private firms to inspect their building plans and report those plans certified—a system that it calls "third-party review."

New York City's Department of Buildings (DOB) initiated self-certification in 1995 to ease a permit backlog and stimulate development. Officially called "professional certification," the practice allows architects and engineers to confirm that their plans are compliant with applicable laws, rather than submit them to DOB inspectors. "It can save three or four months, and these are big numbers," says Marvin Meltzer, a partner at Meltzer-Mandl, adding that the practice is a valuable marketing tool. Forty-eight percent of the 7,000 new building applications submitted in 2006 were self-certified.

But self-certification can also make it easier for some people to take liberties with building codes and zoning restrictions. In 2006, the city discovered that Brooklyn-based architect Robert Scarano was skirting height restrictions by mislabeling whole floors as mezzanines. Safety concerns, while not necessarily caused by self-certification, have since prompted the city to halt construction on roughly 60 of his buildings. Scarano proved to be the tip of the iceberg. A DOB audit found that 57 percent of self-certified new building plans in 2006 failed to comply with codes.

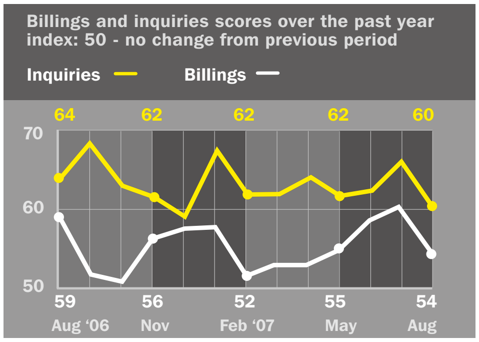
State lawmakers are putting the brakes on self-certification. In August, with the backing of New York City buildings commissioner Patricia Lancaster, Governor Eliot Spitzer signed into law the "self-certification bill." It enables DOB to prevent architects from self-certifying if they have misrepresented plans in the past. Next up is a bill that seeks to limit the practice for honest architects. It would require a full DOB inspection for plans to add more floors onto existing buildings, common in land-starved Manhattan. "Most architects are superb professionals, but there are some bad apples, and their main concern is not safety but speed," says Linda Rosenthal, the bill's author. Her proposal, the most comprehensive overhaul of self-certification since 1995, cleared the assembly's Cities Committee in May and is awaiting action from Ways and Means.

Some local officials worry that the measure could have a chilling effect on development. "It has the potential to slow down the issuance of permits," Lancaster says. "The focus should be on how the city can hold responsible parties accountable and how we can prevent repeat offenders from utilizing the privilege." Meltzer, who certified all of his own buildings over the past 12 years, appears to agree: "The majority of us who know what we're doing are being punished for the minority who don't."

Advocates of limiting self-certification respond that safety is their main concern. "More eyes on building plans means more safety," Rosenthal says. It remains to be seen if other cities nationwide will agree. *Dorian Davis*

After reaching a near record high, AIA's billings index falls

Summertime turmoil in credit markets finally caught up with billings at architecture firms. The American Institute of Architects' Architectural Billings Index (ABI) fell 6.1 points from its two-year high in July for a score of 53.9 in August; the volume of new inquiries fell by a similar amount for a score of 60.5. Although these numbers marked the biggest drop since September 2006, when the ABI lost 7.3 points, billings remain healthy because any score over 50 points represents growth. The ABI is compiled using data sent to 300 mainly commercial firms. Kermit Baker, the AIA's chief economist, said in a press release that jitters in the residential sector led to a squeeze on nonresidential construction lending. Studies show a correlation between the ABI and construction spending nine to 12 months in the future. *James Murdock*



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Green's the new school color at Harvard and Yale

A pledge by Harvard University to cap carbon emissions from a new cluster of science buildings, heralded in late September, coincided with a bit of green news from the second-oldest Ivy. Yale University announced that Foster + Partners is designing a LEED-certified building to triple the size of its business school.

Harvard's news comes as part of its six-year-old Green Campus Initiative, which has guided Cooper, Robertson & Partners' plans for a 341-acre expansion campus into Allston, across the Charles River from the university's historic home in Cambridge, Massachusetts. The university pledged that its new Allston Science Complex will emit no more than half the greenhouse gases of similar education and research facilities. It retained Behnisch Architekten, based in Stuttgart, Germany, to design four buildings totaling 589,000 square feet. The project will include cogeneration and micro-grid distribution of power, geothermal wells, and solar chimneys. Behnisch, which recently opened an office in Boston, will also study the feasibility of adding windmills, a geothermal loop, and capturing potential heating energy from the sewage system.

For anyone keeping score, Harvard has an edge in its green rivalry, of sorts, against Yale: Behnisch will design to a LEED Gold standard, while Foster has committed only to basic LEED certification. The London-based firm was tapped to design a 230,000-square-foot building for Yale's School of Management. Tripling the school's footprint, the building will allow it to graduate classes of up to 300 M.B.A. students a year, compared to the 180 it currently averages.

The school's current home consists of large classrooms and dank study rooms in a Modernist box, as well as faculty offices and makeshift study space in two Victorian-era houses a block away. Foster's 4.25-acre site, just east of the current complex, will open onto Whitney Avenue, where many students live and shop. Yale is still refining program elements, but it hopes the glassy new building will give its 29-year-old business school a fresh identity, helping it enter the ranks of top M.B.A. programs nationwide. "A new campus will afford the opportunity to tailor classroom and breakout spaces to the active learning that is now central to how we teach," says Yale School of Management dean Joel Podolny. *Alec Appelbaum*

Penn student housing sprouts a down-to-earth green roof

A green roof will cap the Radian's street-level shops.

IMAGE: COURTESY ERDY MCHENRY ARCHITECTURE

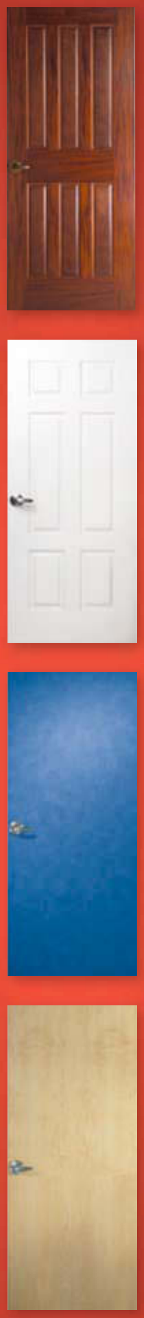
Most green roofs are located out of sight and beyond reach, but the future tenants of a residential and retail project now under construction in Philadelphia will get to enjoy a green roof designed to serve as both a garden and a storm-water treatment system.

The roof will be located atop the ground-floor retail podium of the Radian, a 154-unit privately owned student housing-complex on the University of Pennsylvania's Philadelphia campus. Ringed by dense plantings of black-eyed Susans and other flowering species, the space is located next to an outdoor dining area.

"Our goal is to make it approachable and put it in people's face so that they understand the environmental value," says David McHenry, AIA, of Erdy McHenry Architecture in Philadelphia and the project's lead architect. "It's functional, and there is an educational component to it."

The 12,000-square-foot green roof, which covers 20 percent of the Radian's total footprint, was designed primarily to satisfy the city's storm water control regulations. Special drains will capture runoff from impervious sections of the terrace, funneling it into an irrigation system for the plants. Locally based Pennoni Associates is responsible for the landscaping and engineering, while Roofscapes, a green-roof specialist also of Philadelphia, is providing technical assistance.

Although the Radian's developer, University Partners, is not seeking LEED certification, the project's other sustainable features include a prefabricated rain-screen wall-panel system. The facade patterning responds to the varied size of the dwelling units and thus helps reduce the massing of the 14-story tower. Construction is scheduled to finish in August 2008. *Violet Law*



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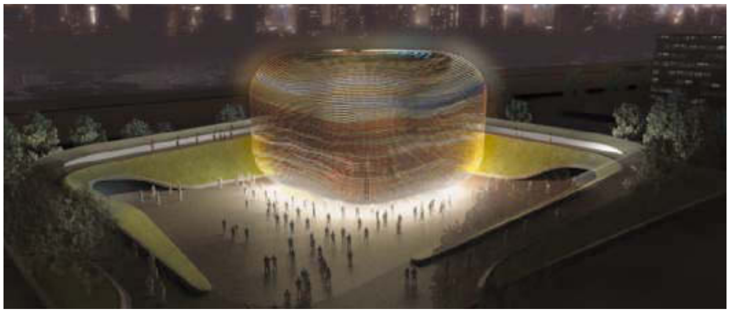
News Briefs architecturalrecord.com/news/

Maurice Cox was appointed design director for the National Endowment for the Arts on October 2. The former mayor of Charlottesville, Virginia, he is an associate professor at the University of Virginia's School of Architecture, a recipient of the Loeb Fellowship at Harvard's Graduate School of Design, and a founding partner of the Charlottesville firm RBGC Architecture. He received his degree from the Cooper Union. Among many tasks at the National Endowment, Cox will oversee the Mayors' Institute on City Design, the Governors' Institute on Community Design, and Your Town programs. He replaces Jeff Speck, who stepped down in March after two two-year terms so that he could return to private practice. *James Murdock*

Waiting for Godot, Samuel Beckett's classic play, will be performed in New Orleans during the first two weekends in November. The Classical Theatre of Harlem, CreativeTime, and digital media artist Paul Chan are staging the production on street corners in the devastated Lower Ninth Ward and Gentilly neighborhoods to bring attention to the lack of rebuilding there. Chan had the idea after visiting these areas last year and discovering a scene that reminded him of *Godot*'s uncertain, troubling, and nonsensical atmosphere: "It was unmistakable. The empty road. The bare tree leaning precariously to one side with just enough leaves to make it respectable." *Diana Lind*

Perkins + Will, the Atlanta-based giant that already holds the No. 5 spot on *Engineering News-Record*'s annual list of the Top 150 Architecture Firms in 2006, acquired the New York City practice Guenther 5 Architects in October. Terms of the deal were undisclosed. Robin Guenther, FAIA, founded the firm that eventually became Guenther 5 in 1991. Over the years, it grew into an 18-person office specializing in health-care design and sustainability. In addition to Guenther, its other principals were Jason Harper, AIA, and Peter Syrett, AIA. *James Murdock*



Cilia will sprout from Thomas Heatherwick's "Pavilion of Ideas" in Shanghai.

Thomas Heatherwick, the British designer known for installations and products, is embarking on his most substantial architectural work to date: the U.K.'s "Pavilion of Ideas," at Shanghai Expo 2010. He leads a team that includes Casson Mann, structural engineer Adams Kara Taylor, and technology engineer Atelier Ten; it bested five other teams competing for the commission in September. Grass-covered ramparts will flank a 4,300-square-foot volume of exhibition space, while so-called "cilia" will protrude from an amorphous enclosure and sway in the wind. These 16-foot-long spines, which will be made of either bamboo or aluminum, will terminate in programmable lights that can project images, colors, and messages over the entirety of the facade. *David Sokol*

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THE VISTAWALL GROUP — TAKING A WIDER VIEW

The Grand Rapids Art Museum opened its new building on October 5—the first purpose-built museum in its 83-year history. Designed by wHY Architecture with Design Plus, based on a concept by Munkenbeck & Marshall, the 125,000-square-foot building features a concrete-and-glass exterior with a large entry loggia and an open quality in its interior spaces intended to allow natural light to play a major role. Louvers, some fixed and some movable, cover the exterior and help regulate the amount of daylight. The building is aiming for LEED Platinum or Gold certification. *John Gallagher*

The Grand Rapids Art Museum's very own home.

UNESCO officials are scheduled to meet this month with representatives of the Edinburgh-based architect RMJM, which is designing the "Okhta Center" skyscraper—formerly known as Gazprom City—in St. Petersburg, Russia. The United Nations Education Scientific and Cultural Organization has put the city on notice that it risks losing its status as a World Heritage site if the 1,050-foot-tall tower is built as planned for the Gazprom gas company. St. Petersburg authorities have until February to submit a report to UNESCO detailing Okhta's impact on the city's historic skyline. *Paul Abelsky*

A blight on St. Petersburg, Russia?

O.M. Ungers died on September 30. The 81-year-old German architect, author, and teacher was chairman of Cornell University's architecture department from 1969 to 1975. Among his best-known and most recent projects are the $1.1 billion restoration of Berlin's Pergamon Museum, which is set to finish in 2015; Cologne's Wallraf-Richartz Museum, opened in 2000; and his 1994 German ambassador's residence in Washington, D.C. Describing his style, Jonathan Glancey wrote in the U.K.'s *Observer* that Ungers "was keen to renew the Grecian notion of there being fundamental architectural building blocks—cube, cylinder, and so on—that could, nevertheless, be reinterpreted or reorganized for specific building sites." *James Murdock*

ENDNOTES

- California Polytechnic State University's Architecture Department received an anonymous $60 million gift, the school system's largest ever.
- The Canadian AE firm Stantec bought Chong Partners Architecture, a San Francisco–based firm that specializes in health care.
- EFCO Corporation, the window and curtain wall manufacturer, was purchased by Pella Corporation, the window and door maker; it will still be branded as EFCO.
- Jacques Herzog and Pierre de Meuron won a Praemium Imperiale architecture award, which recognizes lifetime achievement in arts categories not covered by the Nobel Prize.

IMAGES: COURTESY HEATHERWICK STUDIO (OPPOSITE); GRAND RAPIDS ART MUSEUM (LEFT); RMJM / © WWW.GLOCG.COM (RIGHT)

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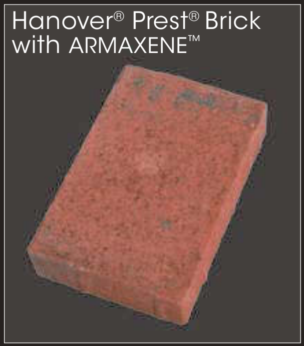

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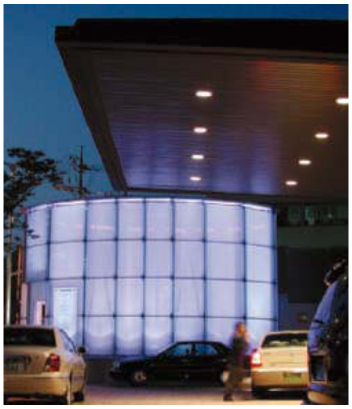
For and about the emerging architect

archrecord2

It's back to the Big Apple this month, where we found David Yum, an architect who has weathered the pains of establishing a small practice and is making a name for himself in New York City and beyond. We also found a fascinating program at Columbia University's Visual Media Center that fuses technology with the study of art and architecture. ONLINE: *Has your career as an architect been affected by where you got your degree? Respond at* **construction.com/community/forums.aspx**.

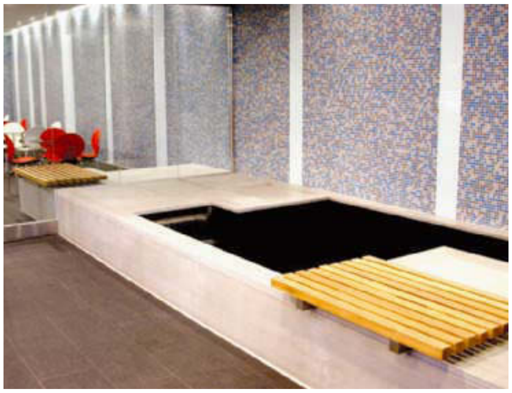
Design

David Yum Architects: Appreciating complexities



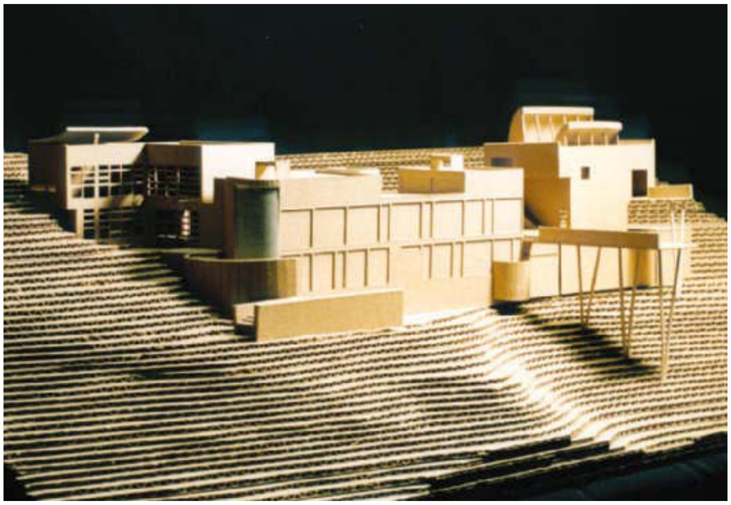
When architect David Yum started his own practice, David Yum Architects, in New York City, in 2000, he was eager, enthusiastic, and confident success would be imminent. After all, he had two projects in hand; lots of experience from living abroad and in San Francisco for five years, working with such architects and firms as David Chipperfield, Alvaro Siza, Mark Horton Architecture, Gwathmey Siegal and Associates, and Shelton Mindel & Associates; and architecture degrees from Columbia University and the Harvard Graduate School of Design. But after 2000 came 2001, and suddenly the economic climate shifted, the projects stalled or fell through, and Yum found himself struggling. "When I started, the economy was fantastic, and then it was horrible," says Yum. "And both the projects I had were somewhat related to the financial-services industry, which was suffering. It was a difficult time." But Yum stuck it out, and through perseverance and chance, got hired to renovate a 12,000-square-foot "cottage" in Hyde Park, 100 miles north of New York City, that Frederick Vanderbilt had built for his niece in 1896. Other projects followed, putting the practice on track. Yum says his experiences shaped his thinking about architecture. "So many different complexities go into creating buildings—social, political, monetary, cultural. You have to find a solution that synthesizes it all. It's intriguing to participate in that—to be able to create a moment that addresses those issues. And I think that finding a synthesis that embraces more of those strands than fewer provides the richer, more resolved solution."

For Yum and his firm, which has fluctuated from three people to as many as eight, finding a resolved solution that makes sense for the project means plenty of material and programmatic research, creative thinking, and often a do-it-yourself attitude. "For one residential interior project in New York City, we developed this wonderful screen that the client just loved, but he said, 'Who's going to pay for that?' " says Yum. "We wanted to do it, so we worked with resin, poured our own molds, and physically fabricated it ourselves." Needless



Leema Building, Seoul, Korea, 2004

Renovation and new construction for an office building including lobby, pavilions (left), and an arcade (above). Traditional and modern forms informed the project.



High Ridge Residence, Pound Ridge, New York, unbuilt

Model for a home using stacked stone and concrete walls as well as terraces to frame views. Inside, a parabolic curve allows natural light to penetrate the space.

IMAGES: COURTESY DAVID YUM ARCHITECTS

Park Ave. Loft, New York City, 2006
Renovation of a 2,000-square-foot loft that includes sliding and nonsliding screens as devices to divide spaces and define geometries of perspective.

Remnant Ministry Center, New York City, 2002
Renovation of a 12,500-square-foot building into a community center entailed organizing spaces around an administrative and circulation core.

to say, the client was more than pleased. "It's that kind of material exploration and attention to detail that excites us," he says, "and it's often the lower-budget projects that end up letting us be the most experimental."

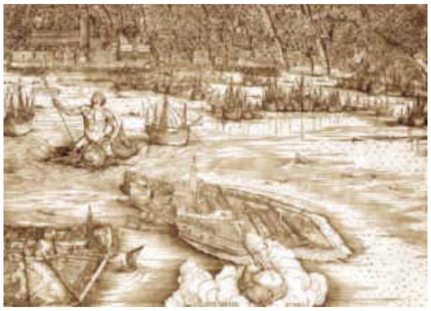
With his practice stable and word-of-mouth bringing in a consistent roster of clients, including several in the tristate area, more than one in Korea, and a winery near Santa Barbara, California, Yum says he's looking forward to expanding, and ready to take on the growing pains. "Of course I'd like my firm to grow and get projects that more people get to experience," he says, "but I do love the size we are now. We have a collaborative atmosphere, get to participate in competitions now and then, and have a lot of human interaction." Riding the roller coaster of creating a small practice just may have prepared him for whatever comes along. "When you're a small firm, a couple of projects can change your life. We're open to that." *Ingrid Spencer*

For additional photos and projects by David Yum Architects, go to **architecturalrecord.com/archrecord2/**.

Work

Mapping Venice: Students take on the city of water

One of the biggest frustrations of architectural-history professors is that the material they teach and the students to whom they're teaching it are often separated by thousands of miles. Ask any of them what they'd do for their students with a million bucks, and most would say, charter a private jet and let their students visit and experience first-hand the great monuments of the world.



Jacopo de'Barbari, View of Venice, 1500 *(woodblock print), one section of six, Cleveland Museum of Art (far left). Cassy Juhl photographing in the Basilica di Santa Maria della Salute (left). James Conlon and Pilar Peters along the Grand Canal (below).*

David Rosand, professor of art and architectural history at Columbia University, doesn't have a million bucks to spend on his students. So, when it came time to teach them about the city of Venice—arguably one of the most complicated urban spaces in the world—he cast about for a new approach.

Enter the Visual Media Center at Columbia, a research lab that fuses technology with the study of art and architecture. The center specializes in overlapping a variety of visual data—plans, sketches, historical documents, photography, measurements, and QuickTime Virtual Reality (QTVR) panoramas—to make sense of complex environments. Over the past several years, the Center has collaborated with professors such as Rosand to map places as diverse as modern Istanbul and the Romanesque churches of the Bourbonnais, in France.

"What we had in mind was [to create a Web site] that would introduce students to the very particular urban fabric of Venice, but in a definitely historical context," says Rosand. To achieve this, he used as his baseline the aerial view of Venice carved in wood by the Venetian painter Jacopo de'Barbari dating to 1500—called the Barbari plan. Rosand designated dozens of "hotspots" on the plan, such as the Scuole San Rocco or Basilica San Marco, where a plethora of architectural and urban information comes together. As one mouses over the plan, this information begins to pour forth. At one moment, you're looking at a plan view of a square, then an aerial photograph, then you're in a virtual model of a Renaissance church that sits on the square, reconstructed from contemporary photos and sketches, looking at the artworks that were originally painted for the building but are now dispersed in art collections around the world. In the next moment, you're twirling about the room riding one of the nifty QTVR panoramas that really make you feel like you're inside the structure.

"Much of our work begins with a frustration with conventional pedagogical techniques—in particular, the side-by-side slide comparison [traditionally used in art-history classes]—for representing works of architecture, archaeological sites, cultural landscapes, and cities," says James Conlon, director of the Media Center. To simplify things, Conlon's group developed a "digital magnifying glass" (created in Flash by VMC designer Juliet Chou) that keeps the viewer on the main page—in this case, the de'Barbari woodcut—while being able to peer quickly into the other layers of information. "Without pretending to create an illusion, we present the [city's art and architectural treasures] in situ, allowing students a fuller notion of their original settings and visual relationships," says Rosand. "Not a substitute for going over there, but a good preparation." *Paul Bennett*

For an expanded article and more information about the Mapping Venice project, go to **architecturalrecord.com/archrecord2/**.

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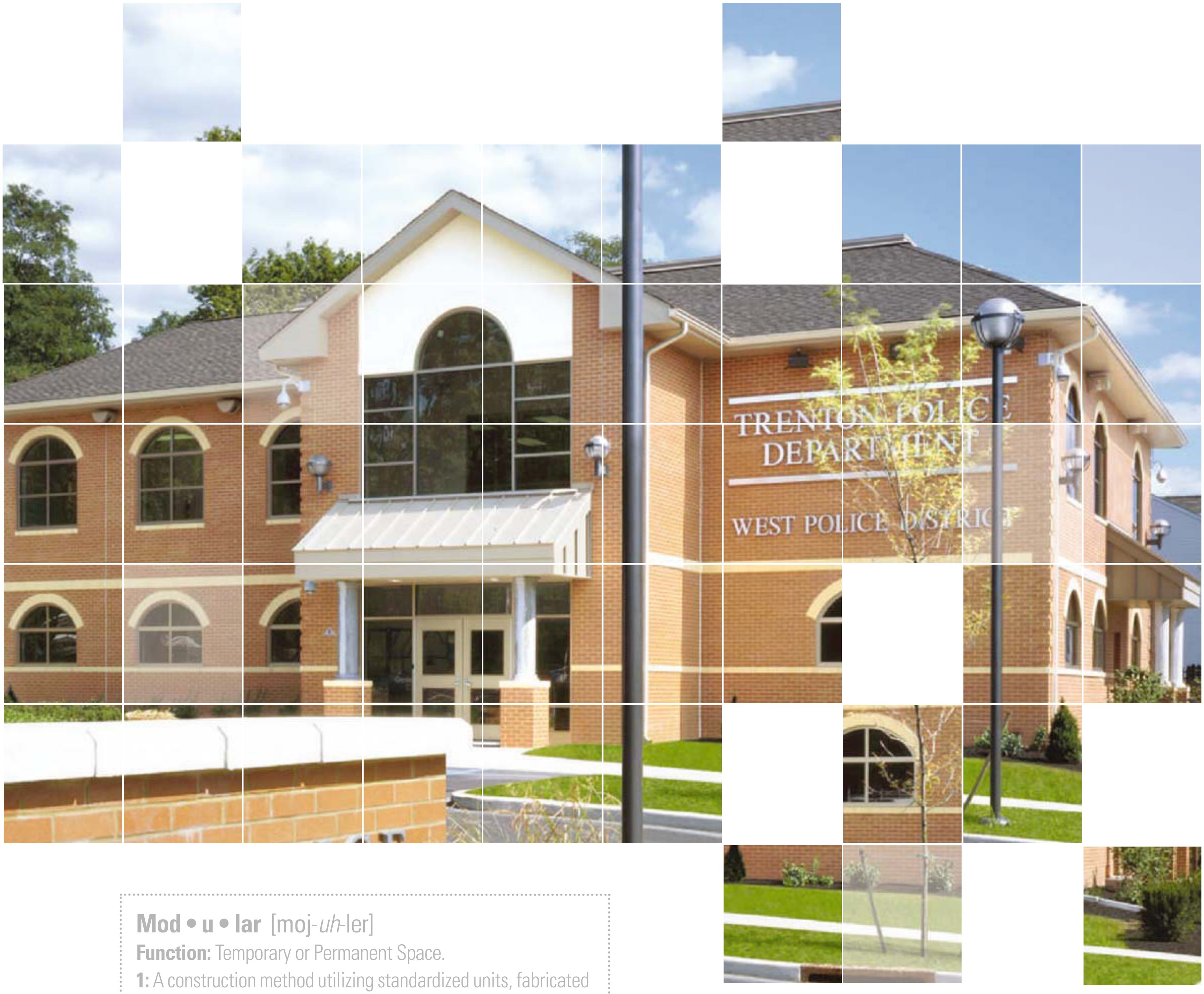

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Signore Piranesi on his own terms

Exhibitions

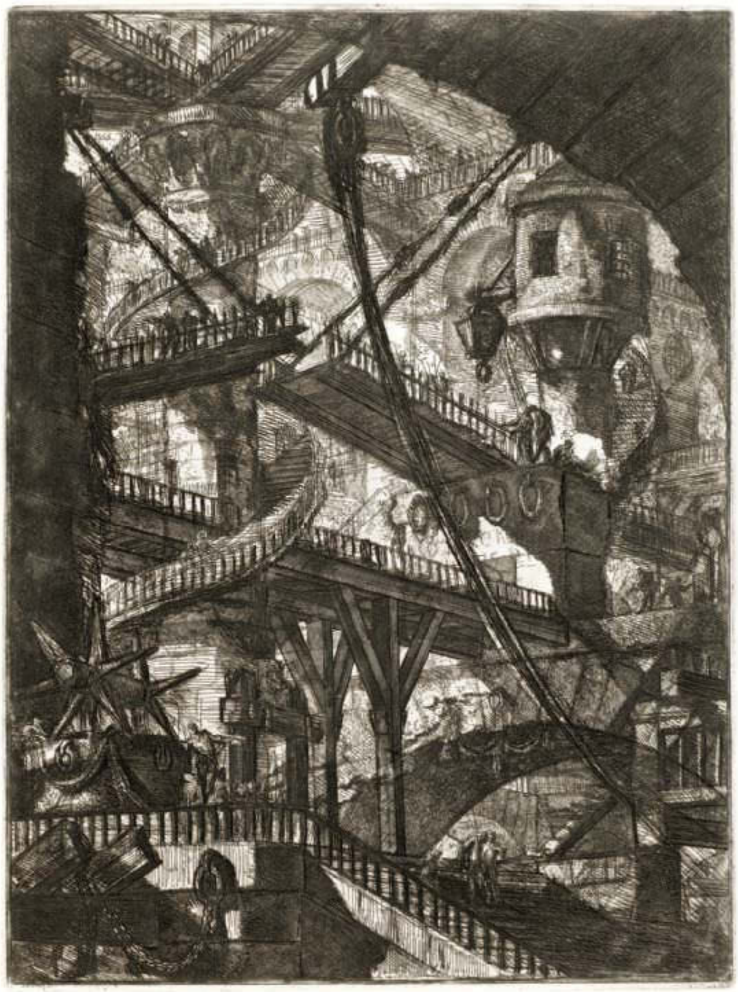
By Russell Fortmeyer

Piranesi as Designer. *Curated by Sarah E. Lawrence and John Wilton-Ely. At the Smithsonian's Cooper-Hewitt, National Design Museum, New York City, through January 20, 2008; Teylers Museum, Haarlem, the Netherlands, February 9–May 18, 2008. www.cooperhewitt.org.*

In the architecture community since the 1970s, or at least in architecture's diminutive circles of theoretically discursive backtalkers, Giovanni Battista Piranesi—the 18th-century Italian architect and designer—is a bit of a god. Merely invoking his name lends an unquestionable intellectual rigor and air of probing investigation of dramatic light and fragmentary space to the rationale for any architectural project.

Piranesi has always been used—or misused—like this, as a fascinating new show at the Cooper-Hewitt, National Design Museum, *Piranesi as Designer*, attests. The show documents the architect and designer's wide interests and, especially, his influence on others, beginning in the 18th century with Robert Adam and Etienne-Louis Boullée, Sir John Soane, and Claude-Nicolas Ledoux, and culminating in the 21st century with filmed reflections by architects as diverse as Peter Eisenman, Robert Venturi, Denise Scott Brown, Michael Graves, and Daniel Libeskind. The ambitions of the show's curators, Sarah E. Lawrence and John Wilton-Ely, is to strip the theoretical trappings off of Piranesi, who died in 1778, and take a leveled academic look at his complete body of work, while not ignoring architecture theorists' more recent fascination with him.

Taking on Piranesi is like taking on Modernism, in all its ambiguous threads of development. Surely it's impossible to determine exactly where his influence stops. Born near Venice in 1720, Piranesi trained as an architect, but gained experience as a stage designer and archaeologist, among other things. As the story has it, he moved to Rome and began work as a *vedutista*, creating *vedute* ("views"), in this case etchings of the city's vast ruins, and selling them as souvenirs. These became increasingly fantastic and imaginative, expressing Piranesi's disgust with contemporary architecture and his belief that ancient Roman architecture was superior to that of the Greeks.

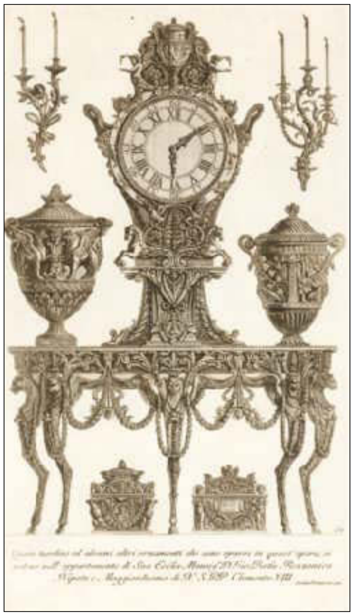


Piranesi's 1761 *The Drawbridge*, from the *Carceri* series of etchings, has inspired architects like Peter Eisenman in his 2006 Phoenix stadium (left).

PHOTOGRAPHY: © MATT FLYNN (RIGHT); COURTESY PETER EISENMAN (LEFT)

Piranesi had the opportunity to prove himself an architect when the church commissioned him in 1763–64 to complete an interior for the Lateran Basilica in Rome. Several drawings of his multiple proposals are exhibited here—he wasn't satisfied with a single scheme—and they reveal his critical intentions through a paper architecture. In one drawing, he develops a highly detailed, decorated section through the sanctuary, leaving out the roof and foundation structure. He then frames the section on what appears to be an unrolled piece of paper, which slightly overlaps the plan drawn directly beneath it. This reflexive condition of heightened artificiality and simultaneity, both in the combination of media and the diverse messages joined together in the ornamental surface treatments, prefigures so much of what architecture has considered its territory since. If you need evidence for why the exhibition and its contributors call Piranesi the "first Modernist," look no further.

Following this section in the show, it's not a difficult conceptual leap into the galleries presenting



The decorative Piranesi: a 1769 table and clock design (above) and a 1767 chimneypiece for John Hope (left).

Piranesi's work in the decorative arts. Here, the curators bring a small treasure of pieces together—including an entire mantelpiece, clock, cups, candle stands, tables, and a settee—either designed by Piranesi or inspired by his drawings. Depending on one's taste—that 18th-century concept—you might be more enticed by the drawings and etchings, which can be a revelation (and nearly all of them from New York collections, including the Morgan Library, Cooper-Hewitt, and Columbia's Avery Library). An etching from his 1769 *Diverse Maniere*—a book of his designs that included a great deal of Rococo-inspired furniture—illustrates a side table with a large clock balanced on either side with vases and sconces, all meticulously covered with ornamental leaves, horses, sphinxes, human faces, ribbons, griffins, and hooves at the base of the table legs. (Some of these ornamental details, especially in a few smaller sketches included in the show, read like a sourcebook for William Blake's work decades later.)

For architecture, Piranesi's point with this work, it seems, is the surface, which in this particular etching appears flattened without shadows, much in the way Robert Adam's interiors were developing in England at the time. Piranesi's influence on Adam, and vice versa, are both well documented in the essential book accompanying the exhibition. To some degree, it is the subtext of the entire show, as Adam played such a significant role in promoting the full range of Piranesi's work to a larger audience. As the late historian Robin Evans has shown, Adam largely owed the "decorated surface" of his interiors to Piranesi's advocacy of early Roman architecture, particularly flat-patterned wall decorations. Adam and his contemporaries used the technique of the decorated surface, where four wall elevations are drawn flat on the paper, surrounding the floor surface, in order to conform all furniture, window dressings, and ornament to a totally flat elevation, devoid of the contamination of the exterior or structure. As Evans argued, Adam needed the drawing technique in order to functionally differentiate the individual rooms of his houses, since he had broken the hierarchy of the traditional plan and instead designed rooms around a circular path, the so-called "circuit plan." With no hierarchy—no center to hold a design together—via Adam, Piranesi changed our relationship to architecture.

Along those lines, there are two projects of Piranesi's included in the show and book that have held great interest for architects: the 1749–50 etchings, *Invenzioni capric di Carceri*, or prison interiors, and the 1762 *Il Campo Marzio Dell'antica Roma*, a map of Rome that combines scales, historical periods, and both real and imaginary structures into what amounts to a radical treatise on the city. What both projects represent, in the words of the late Manfredo Tafuri, is Piranesi's great insistence for contemporary architecture "that the rational and the irrational must cease to be mutually exclusive." Both projects are the ne plus ultra of nonhierarchical design, launch pads for the "difficult" and "complex" architecture we've seen since the 1970s.

Of course, famously, Piranesi only built one remaining structure—a 1764 renovation of the Santa Maria de Aventina church in Rome. The rest is on paper, existing as a record of ideas, a working-through of theory akin to the paper architecture of Eisenman and John Hejduk in the 1970s. Thus, meaning is malleable, capable of broader interpretation, especially when the portable artifact, as in the *Carceri*, is largely conceptual, even unbuildable. Each age adapts Piranesi to fit. At the Cooper-Hewitt, Venturi remarks on Piranesi's "contradiction," while Eisenman sees the work as the dissolution of figure-to-ground relationships into a figure-figure condition, which Graves restates as the undoing of part-to-whole associations in his simplified, building-block architecture. This reads like a script by now, which may explain why few younger architects are all that interested in its problems. Regardless, these disparate architects connected around a critical reworking of the past very much in keeping with Piranesi, though Eisenman perhaps departed the most, using Piranesi's most conceptual work as a way to reinvigorate the projects of the early Modernist avant-garde. This is a small camp in architecture—perhaps it always was. But you have to hand it to Scott Brown, when she admits, quite possibly in gratitude, that with Piranesi's *Carceri* series, at least "he doesn't try to build that stuff."

Obviously, some architects do try to build that stuff. In a 1992 essay, "Visions' Unfolding: Architecture in the Age of Electronic Media," Eisenman, perhaps the éminence grise of contemporary Piranesi-ness, wrote that "Piranesi diffracted the monocular subject by creating perspectival visions with multiple vanishing points so that there was no way of correlating what was seen into a unified whole." This instrumentality of the subject's field of vision certainly inflects the work of architects from John Lautner to Rem Koolhaas to Wolf Prix to more precious examples, such as Diller Scofidio + Renfro, but the question of its ability to revolutionize contemporary architecture, as it did in Adam's case, remains unresolved. For example, the inclusion of Eisenman's design for the Arizona Cardinals stadium [RECORD, November 2006, page 144] looks appropriate, perhaps more so than any other contemporary project featured in the exhibition, but to consider Piranesi's legacy confined to the problems of a sunbelt American football team's sports arena just doesn't seem right. Perhaps the curators are simply saying you go to the Cooper-Hewitt with the Piranesi you have, not the Piranesi you want. Fair enough.

Six years ago this month, *The New York Times*' then-architecture critic, Herbert Muschamp, who died in October, summoned Piranesi in response to the disjointed, ruined site of the World Trade Center attack, lecturing architects that "Piranesi's engraved visions of fantastic classicism should be required study for those now gazing on ground zero." It may be too late for that, but *Piranesi as Designer* makes one thing infinitely clear: Not all architectural projects have reached their logical conclusion. If Modernism is the ruin, where are its new *vedutistas*? ■

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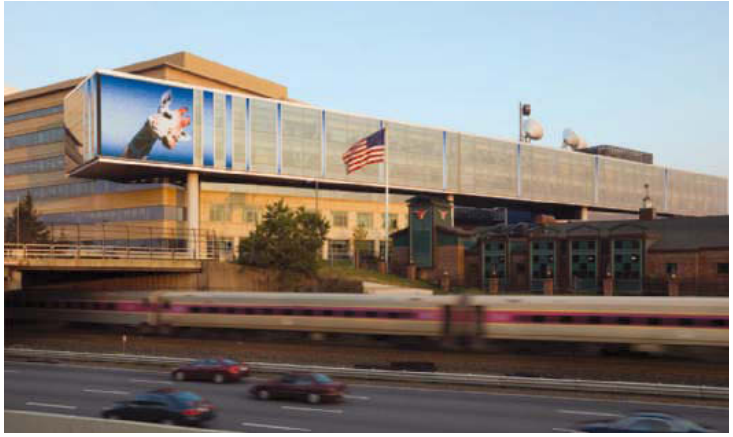
Experiencing architecture with seven senses, not one

Critique

By Robert Campbell, FAIA



At WGBH, Polshek Partnership turned part of the facade into an LED mural.

PHOTOGRAPHY: © JEFF GOLDBERG/ESTO

> "Instead of experiencing our being in the world, we behold it from outside as spectators of images projected on the surface of the retina."
> *Juhani Pallasmaa*

Is architecture turning into a purely visual sport? Will it be just like video games, except that it won't have all those crashing noises?

In my home city of Boston, two recent designs are both terrific in their own way. But they're scary in what they portend for the future of architecture. Of our five, six, or seven senses (depends how you count), they appeal to only one.

The first is the work of Polshek Partnership. It's a new headquarters building for the local PBS station, WGBH. The building cantilevers like a glass bridge out to a point where it overlooks Intersate 90, the Massachusetts Turnpike. There, the facade stops being architecture and becomes, instead, a 30-foot-tall LED mural, aimed at drivers heading into the city. The image will change every day, like a slide show in the sky, using material drawn mostly from the station's archives. Who needs architecture when you can view Julia Child at Thanksgiving?

Dematerializing the facade

The GBH mural is the first serious example in Boston of the kind of architecture we're beginning to see elsewhere—in Times Square, most notably—in which the architectural facade of a building is no longer made of solid materials but is, instead, an ever-changing, programmable image.

Contributing editor Robert Campbell, FAIA, is the Pulitzer Prize–winning architecture critic for The Boston Globe.

Call it digital architecture. Architecture and media become one. It's a horrifying prospect for the future of human life. Who wants to live in a city that's been designed as a multiplex of outdoor screening rooms?

Well, Robert Venturi does, for one. For years he's been arguing for facades that are ever-changing electronic displays. No visible glass or steel, no brick or stone or concrete. Just light impulses. Back in 1996, I was a juror in an invited competition for a new U.S. Embassy in Berlin. Venturi, Scott Brown was one of the six entrants, and even then, the firm proposed a building that was largely an unarticulated box, the walls of which would be screens for changing images of light. That was the same year Venturi published his book *Iconography and Electronics Upon a Generic Architecture*, a title that accurately describes the architecture of his Berlin proposal.

Much as I like and admire Venturi, I hope we don't go his way. Boston's planners, at least, are conscious of the threat. They've required the WGBH mural to project only still images, not moving ones, and none that carry a commercial message. They hope to enforce the same rules everywhere.

A banner in the breeze

My second example is even better as architecture, but no less scary. This is the work of Boston architects Elkus/Manfredi. It's a huge, wordless billboard that wraps a new Neiman Marcus department store in the suburb of Natick. It's 40 feet tall and as long as two football fields. It looks like an enormous banner whipping in the breeze. It's made of stainless steel in three colors—"bronze, champagne, and silver"—that are supposed to remind you of the high-fashion women's clothes inside. The thin steel plates are like the patches in a quilt. Their colors are distributed in such a manner as to make the whole thing look like a translucent, layered fabric that the wind is blowing through. Like Isadora Duncan, maybe, twirling in her sweeping robes.

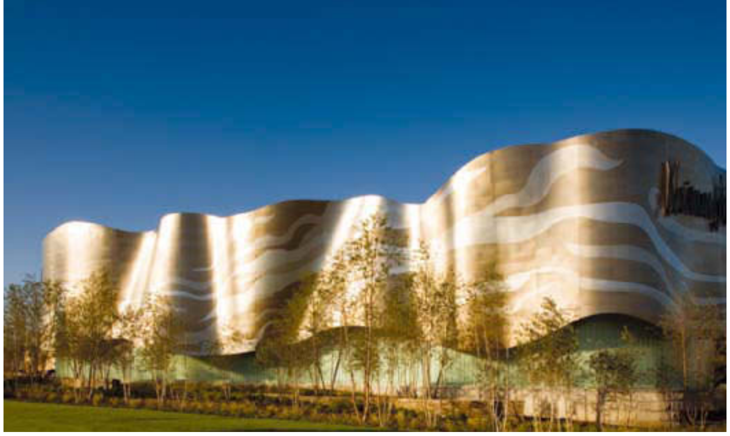
Purely as architecture, Neiman's is a knockout. But it's architecture reduced to two dimensions and one sense, the visual. As with the WGBH mural, this is architecture to look at, preferably from a car. It's like an extra-wide screen at a drive-in, showing the flag while the national anthem plays.

Computers are part of the enemy here. They tend to make every building design look as if it's made of translucent, colored, weightless plastic. It's hard to remember, when you're sitting at a screen, that there's more to the world than the visual.

Maybe someday, architecture won't be up to the architects at all. Driving along in our bean-sprout-fueled cars, we'll simply flip a switch to create our own environment. The same building will be Palladio for me, Goff for you.

Before digital was born

For many years I've held in my mind, as a counter to the headlong rush to a purely visual architecture, the memory of approaching a small church in an Italian hill town. This was an experience of architecture of all the senses. First came the feeling of a slight ache in the knees, an ache that told me I had climbed to an elevation. Then the entry into the building, the sudden drop in temper-



Elkus/Manfredi designed a Neiman-Marcus facade as a rippling ribbon.

PHOTOGRAPHY: © BRUCE T. MARTIN

ature, the increase in humidity. The hushed yet reverberant sound. The dim light, after the glare of the piazza, slowly growing brighter as my pupils dilated. The sound of a motorcycle starting up outside, reinforcing my sense that I was inside. The smell of candles and of old stone and mortar. Walking forward, and feeling the unevenness of a floor whose surface had been sculpted for centuries by other feet, a surface placed, thus, in time. Finally, of course, the way the space configured and reconfigured as I moved through it, the kinetic sense that is probably the most essential quality of architecture.

Perceiving architecture

I'll end with Juhani Pallasmaa, who is my favorite writer on this topic, maybe my favorite writer on architecture, period. He's a 71-year-old Finnish architect and former director of the Museum of Finnish Architecture. He's also taught at Washington University in St. Louis. He's written a lot. One short piece that sums him up well is his essay, “An Architecture of the Seven Senses,” published in a book called *Questions of Perception: Phenomenology of Architecture* (William Stout Publishers).

A few excerpts from this eloquent essay follow:

How materials tell us not only about place but also time: “Natural material expresses its age and history as well as the tale of its birth and human use. The patina of wear adds the enriching experience of time; matter exists in the continuum of time.”

How silence is imaginary sound: “After the clutter of building has ceased and the shouting of workers has died away, the building becomes a museum of a waiting, patient silence. In Egyptian temples we encounter the silence of the pharaohs, in the silence of a Gothic cathedral we are reminded of the last dying note of a Gregorian chant, and the echo of Roman footsteps has just faded on the walls of the Pantheon.”

How we socialize with buildings, not just look at them: “A building is encountered—it is approached, confronted, encountered, related to one's body, moved about, utilized as a condition for other things, etc. … We are in constant dialogue and interaction with the environment, to the degree that it is impossible to detach the image of the Self from its spatial and situational existence.”

Break the mold

And so on. This is the opposite of considering a building as a merely visual experience. There are some kinds of buildings we may love but hope never to see replicated. The Eiffel Tower, for example, should be the only tower in Paris.

I feel that way about both the GBH mural and the Neiman wrap. I like them, but I hope they're not the beginning of a trend. ■

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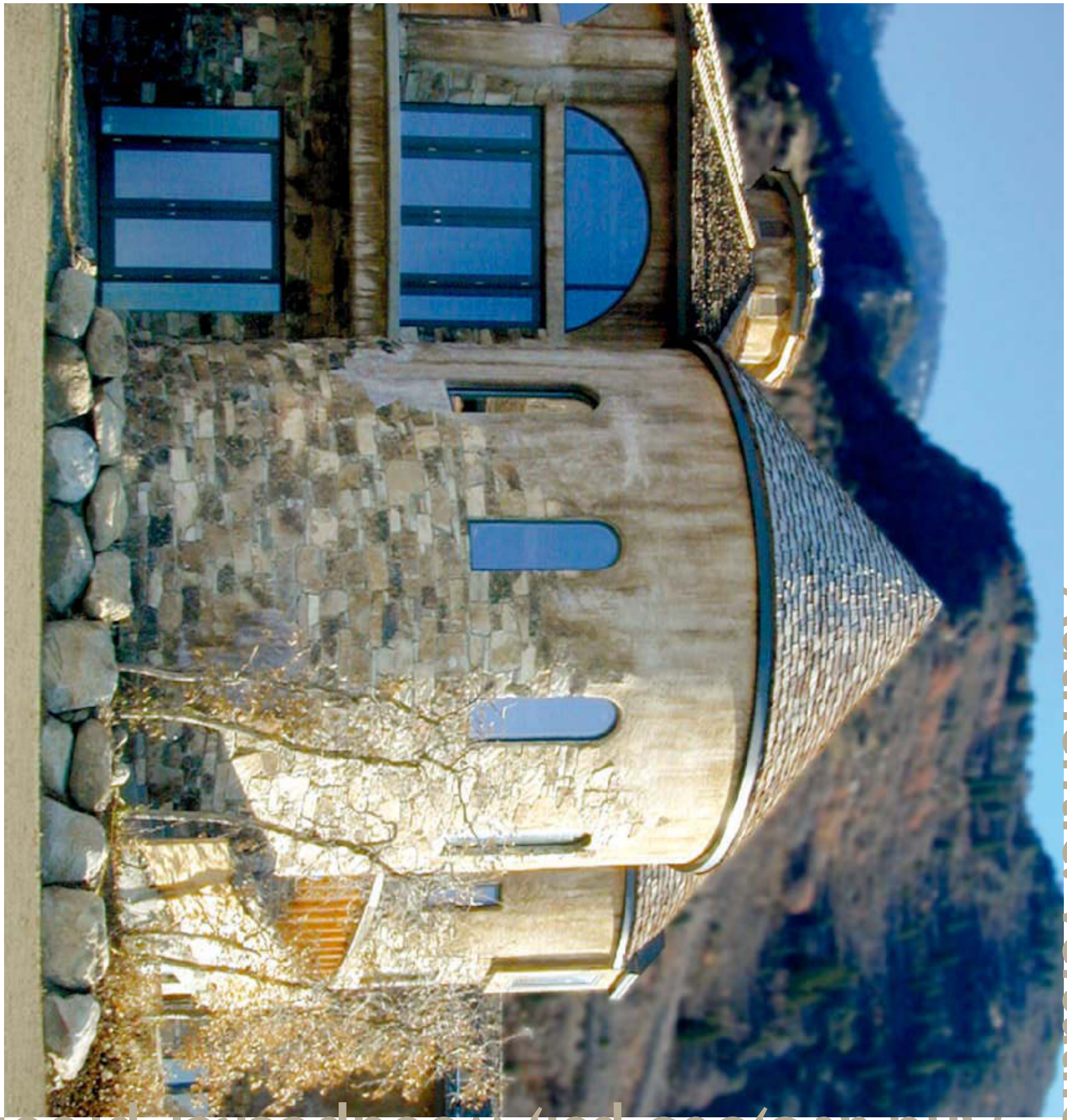

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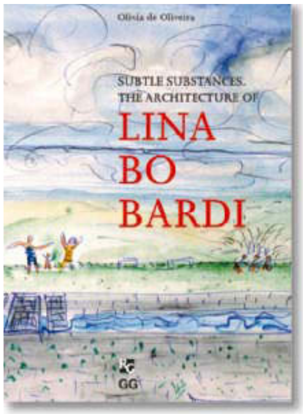
From Brazil to Chicago: Examining the work of five architects

Books

Subtle Substances. The Architecture of Lina Bo Bardi, *by Olivia de Oliveira. São Paulo: Romano Guerra; and Barcelona: Gustavo Gili, 2006, 400 pages, $79.*



For Lina Bo Bardi (1914–92), architecture and life were inextricably intertwined. Italian by birth, Surrealist by artistic inclination, Bo Bardi was a graduate of Rome's Scuola Superiore di Architettura. She threw herself into the Resistance during World War II and became a committed member of the Communist Party. After the war, she entered a curious marriage to a somewhat repentant Fascist functionary and cultural figure, Pietro Maria Bardi, with whom she emigrated to Brazil in 1946. Her adopted country had a profound effect on Bo Bardi's creative thinking, changing her architecture from its Italian Rationalist origins to explorations into Expressionism and Populism.

Italian Rationalism shaped Bo Bardi's first built work, her own Glass House in São Paulo (1951), whose transparent elevations stand on slender pilotis. The Museum of Modern Art (1957–68) in São Paulo similarly breaks free of the ground plane, but its structure is more muscular, a heroic New World form. Breaking the Rationalist, Modernist mold, the Chame-Chame House (1958) assumes a tactile materiality and looks to vernacular sources. At the SESC Pompéia center (1977), also in São Paulo, she transformed an old factory into a recreation and cultural complex for a worker's union, exploiting tough forms and rough materials. Bo Bardi made her talent for transformations apparent even at the smallest scale. Her minute sculpture *Insect*—crafted from the core of a burnt-out light bulb, feather, wire, and glass—is worthy of Marcel Duchamp.

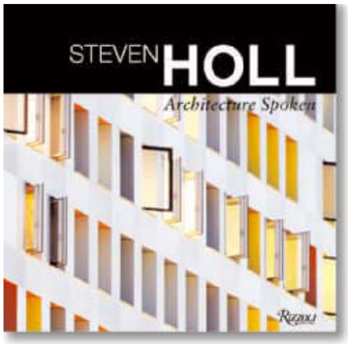
Architect and author Olivia de Oliveira weaves together Bo Bardi's life and work, including many selections from her own prolific writings and abundant visual materials. The book includes many drawings and sketches extracted from sketchbooks and yellow trace, all drawn with a bravado that testifies to a passionately creative mind. These sources provide perhaps the fullest appreciation of the architecture and life of Lina Bo Bardi. *John Loomis*

Steven Holl: Architecture Spoken, *by Steven Holl. New York: Rizzoli, 2007, 304 pages, $75.*

One of the most thoughtful practitioners around, Steven Holl is an artist's architect. Compared to trendy starchitecture, his work is quieter and gentler; for the most part, he eschews the blockbuster in search of a more self-effacing poetic muse. His just completed addition to the Nelson-Atkins Museum in Kansas City, with its five glass boxes unfolding in a landscape like a Japanese screen, stands as a refreshingly understated refuge in the current explosion of gimmicky museums.

Four lectures—titled "Pro-Kyoto," "Compression," "Porosity," and "Urbanism" and given at half a dozen architecture schools around the world—provide the framework for *Architecture Spoken*, an overview of Holl's remarkable recent work. A project chronology, a collection of anecdotes, and an affectionate foreword by Lebbeus Woods round out the book's offerings.

The charged atmosphere of lectures rarely translates well into print, and lively discussions of concepts such as phenomenology can come across as forced. ("I always read the science section of *The New York Times* cover to cover.") And like many of his colleagues, Holl often confuses archispeak with erudition: "The polychrome architecture of China inspires a new phenomenal dimension that especially inscribes the spatiality of light."



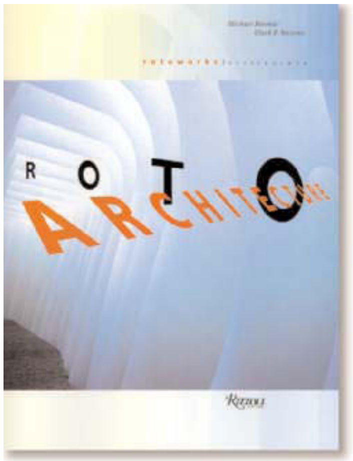
Visually, Holl's work reveals itself clearly and needs no pedantic lecture notes. His Swiss Ambassador's Residence in Washington, D.C. (modest and ecologic), Chapel of St. Ignatius at the University of Washington in Seattle (an American Ronchamp), and Turbulence House in New Mexico, ("like the tip of an iceberg indicating a much larger form below") are among the best American buildings of the post-Postmodern period.

What also emerges from this book is Holl's debt to Finnish masters Alvar Aalto and Reima Pietilä, especially in his buildings for the University of Minnesota's architecture school and the University of Iowa's School of Art and Art History. Holl's masterpiece, Simmons Hall at MIT, makes this connection even clearer, nodding respectfully to Aalto's nearby Baker House. When Holl won the competition to design Kiasma, a museum in Helsinki, the choice elicited an outcry because he wasn't Finnish. But his building's combination of Modern and organic sensibilities turned out to be quite Finnish. *William Morgan*

Roto Architecture: Stillpoints, *by Michael Rotondi and Clark Stevens. New York: Rizzoli, 2006, 384 pages, $65.*

Michael Rotondi is no longer the director of SCI-Arc, the design school he founded in 1972 with Thom Mayne and others, but he hasn't lost his desire to teach. *Roto Architecture: Stillpoints* is as much a musing on the creative process as a monograph on the

Books



work that he and partner Clark Stevens have produced since splitting off from Mayne and Morphosis in 1991.

In mini essays scattered through the book, Rotondi recounts evenings with elders of the Oglala Lakota tribe, for whom Roto designed an arts center, and the "warm, thick green tea" he "sipped in slow motion" after exploring a moss garden in Kyoto. At another point, he asks, "Is it possible to make a building that is less than visible, that can be seen only when you look twice?"

The buildings presented here, by contrast, jump off the page. They have folds and dramatic slicings, to be sure, the nervous tics that define a particular strain of Southern California design. But Roto's best works crackle with invention—not brash like Morphosis, but supple and fresh. For example, a Los Angeles house next to a rail yard proves smart and daring with a 60-foot-wide metal wall that flaps up and over an existing concrete shell to keep out noise and sun. At Texas A&M's school of architecture, the firm designed walls of rippling brick that could be rich red curtains in the breeze.

But the Roto partners know when to hunker down. A cube of Cor-Ten steel anchors their Joshua Tree House set between the flat desert and sandstone hills, while Stevens's Gompertz House in Livingston, Montana, wraps cedar slats around three levels of living space, creating a weathered obelisk receding into itself under the big sky.

Close the book, and Rotondi's koans aren't what linger. It is the buildings in *Stillpoints* that stretch our definition of what architecture can be. *John King*

Future Systems, *by Dejan Sudjic, London and New York: Phaidon Press, 239 pages, 2007, $75.*

The story of this trend-setting architectural design practice is very much the story of Jan Kaplicky, who fled Czechoslovakia during the 1960s and worked in London with Norman Foster before founding Future Systems with David Nixon. Now that his firm has reached the quarter-century mark and he has achieved renown for his architecture and product designs, Kaplicky has certainly earned the right to a substantial monograph on his work. But while *Future Systems* succeeds as a sumptuously illustrated coffee-table volume that pays homage to Kaplicky's accomplishments, it largely fails as a comprehensive text.

FUTURE SYSTEMS
PHAIDON

Future Systems employs many talented designers, but the main creative direction comes from Kaplicky's two long-term partnerships. The one with Nixon, from the firm's inception in 1979, is largely ignored in this book. Instead, it concentrates on Kaplicky's partnership with Amanda Levete, which since 1989 has produced lamps, glassware, vehicular prototypes, and buildings embodying dramatic variations on soft, droplet shapes.

The book's sensational design overwhelms the reader, as does Sudjic's ponderous and uncritical P.R. prose. Looking like a candy box wrapped in aluminum foil, the book bursts with full-page color drawings and photographs of the products designed by Kaplicky and Levete. Organized into chapters on objects, houses, shops, collaborations, civic projects, bridges, skyscapers, and landmarks, the illustrations demonstrate *Future System*'s creativity better than all of the words.

Kaplicky and Levete have created an architecture nourished by their interest in futuristic fashion. They have emphasized a sensuous, playful plasticity, a sense of whirligig abandon. They have injected erotically charged humor into some projects (such as a phallic skyscraper) and flaunted their love of kitschy glitter (as seen in their aluminum-disc-festooned facade for Selfridges department store in Birmingham, England). Sudjic's text doesn't give sufficient space for Kaplicky and Levete to speak for themselves, something they do with precision. This book is spectacular eye candy, but this firm deserves a deeper probe. *Norman Weinstein*

Douglas Garofalo *, by Joseph Rosa. Chicago: Art Institute of Chicago (A+D Series), 2006, 96 pages, $17.*

Produced in conjunction with an exhibition mounted by the Art Institute of Chicago on the work of Douglas Garofalo, this book struggles with a problem of scale: Its pamphlet size seems at odds with the expansive, theoretical nature of the Chicago architect's varied and intriguing work. And the scenographic approach used by 2x4, the book's graphic designer, while attractive, seems more appropriate to a coffee-table tome.

In his short introduction, Joseph Rosa, who curated the exhibition, stresses the importance of the digital tools that help Garofalo design. Such a focus neatly reprises Rosa's continuing infatuation with contemporary information technology, an infatuation that informed his well-received 2001 exhibition *Folds, Blobs, and Boxes: Architecture in the Digital Era* at the Carnegie Museum of Art in Pittsburgh. Unfortunately lost in the seductive computer renderings and Rosa's musings about "digital ideologies" are the more traditional methods Garofalo uses, including sketches and three-dimensional models, to create his complex and intriguing spatial compositions. The text also scrimps on basic information about the formal investigations central to Garofalo's approach.

Douglas Garofalo
A+D Series
The Art Institute of Chicago
Yale University Press

The body of the book comprises a portfolio of 16 projects with short, well-written descriptions by Carissa Kowalski Dougherty. She places each work within its particular context and notes affinities between projects. But form again trumps content: The entries aren't much longer than many design magazine captions. The reader needs fuller descriptions to properly understand the work. And again, problems of scale arise: a temporary installation on the steps of Chicago's Museum of Contemporary Art receives the same number of pages as the 2,500-seat Korean Presbyterian Church in New York that Garofalo designed with Greg Lynn and Michael McInturf. Diminutive illustrations often border on illegible.

The Art Institute of Chicago and Yale University Press promise additional titles in the A+D Series. Let's hope they make better use of the small format or expand it to allow richer investigations into the evolving nature of contemporary architectural practice in Chicago. *Edward Keegan*

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Firms embrace the emerging role of the sustainability guru

Practice Matters

By Russell Fortmeyer

Brad Pitt views Global Green's sustainable design proposals for New Orleans.

PHOTOGRAPHY: © MARK MAINZ/GETTY IMAGES

In April 2006, the actor Brad Pitt and the nonprofit organization Global Green USA launched a sustainable design competition in hopes of spurring the redevelopment of New Orleans, post-Katrina. It certainly isn't shocking that a Hollywood star, albeit one with a home in New Orleans, would want to raise awareness about the devastated city, but perhaps it is surprising that a celebrity could so meaningfully engage the sustainable design community with such a gesture. Pitt, it seems—like Leonardo DiCaprio and Al Gore—has become a sort of sustainability guru for the larger public, even narrating the ongoing sustainable design television series *design:* e^2, for PBS.

And it turns out that the small, interconnected world of sustainable architecture has its own emerging brand of gurus. Ten years ago, Kirsten Ritchie's job did not exist. As Gensler's new director of sustainable design, she joined the firm in November 2006 to help guide the more than 2,400 of her fellow employees through the rapidly expanding—and confusing—world of sustainability.

Ritchie, who trained and practiced as a civil engineer, describes her role as providing "focus, so there is a key point person for either a client base or even just internally to ask where we start with green-oriented issues." That focus is something that firms nationwide are accepting as integral to the way they do business, represented by the growing ranks of sustainability directors at firms of all sizes.

The rise of the in-house sustainability guru is a change in approach long in the making. For the most part, these are not LEED consultants, in that their chief function is not to prepare the documentation necessary for attaining certification in the U.S. Green Building Council's rating program. Rather, these are people within firms who have been mostly freed from the constraints of day-to-day project work—and it's pressing demands—to develop a more comprehensive view of sustainability as a core principle of a firm's practice. This new individual replaces the previous model—which is still quite common—where a few architects in a given firm championed sustainability as an "extra-curricular activity" in addition to their regular duties on conventional design projects.

Tim Milam, AIA, managing partner at New York–based FXFowle, has been interviewing candidates for the firm's new position of sustainability manager. Although the firm has long practiced with sustainable principles and built several high-profile green projects, Milam says the management has realized that as the firm has grown, it has needed someone who can oversee the consistency and implementation of sustainable design across the studios. "There aren't a lot of these positions out there," Milam says, "and there seem to be a lot of firms with architects working in traditional roles, but from their own interests in sustainability, they have taken on that role."

There are other reasons this role doesn't exist at some firms, either because the firm hasn't embraced sustainable design or because, like Charlottesville, Virginia–based William McDonough + Partners, that's all it embraces. Kira Gould, Associate AIA, is the director of communications for McDonough, but through her role as the 2007 chair of the AIA's Committee on the Environment (COTE), she gets to see how sustainable design is handled by a number of firms. "There is a lot of diversity in how that role is being defined," Gould says. "A lot of firms are open to defining it with the person they find or looking for people to help them shape the role. Many of them are hiring an architect or an engineer." She says sometimes that person can be more of a generalist, especially when they are developing sustainable design in terms of deliverables, staff, research needs, outreach efforts to other sources, and communications. "The first thing you need to start with is defining what sustainable design means for the firm," Gould says.

Tom Hootman, AIA, became the director of sustainability for Denver-based RNL Architects in April 2007. He says the role emerged out of his leadership of the firm's internal "green team," which is the fairly ubiquitous terminology for any design firm's sustainable interest group. Although his initial interest, Hootman says, derived from his background in integrated design—he received an undergraduate degree in architectural engineering before embarking on architecture studies. Unconventional credentials are another hallmark of sustainable design directors, especially, as Gould notes, given the recent penchant for firms to hire people trained in such specialties as hydrology, economics, biology, and ecology to participate in newly established green design studios. For example, before she joined Gensler, Ritchie was working as the director of environmental claims certification at Scientific Certification Systems. Though he prefers to hire an architect, FXFowle's Milam is open to other disciplines. He notes, however, that "it's crucial to understand what we're doing with our projects—we're looking for someone who cares about design and sustainability."

RNL employs engineers not only for sustainable design, and recently hired one to perform energy modeling on green projects. Hootman says his role is to bridge the gap between all of the offices and studios, whether they are engineering, landscape architecture, urban design, or architecture. "Being director of sustainability is a larger role, with more accountability," Hootman says. "Putting it out there in the marketplace says it's a more important part of our business model, but it also means more to our staff to have dedicated a person full-time to the role."

Although he has a fairly public role as chair of the USGBC's Colorado chapter and the face of RNL's sustainable marketing, Hootman spends most of his time focused on developing the firm's internal practice: establishing design guidelines and finding champions for green projects; training staff and developing a resource library; refining the firm's specifications with the latest green product attributes; and greening the office, including the pursuit of LEED Gold certification for its new Denver location. Repeating the sentiments of directors at many other firms, Hootman says it has never been his intention to become the firm's sole specialist. "We want to elevate the entire firm with qualified sustainable designers because I can't be everywhere," he says.

Hootman's role within the USGBC is yet another hallmark of the sustainable design director. Many architects who championed green design early on in their firms often played significant roles in the development of the USGBC's local chapters, as well as the national organization. For example, Ritchie has served for the past five years on the materials and resources technical advisory group for the USGBC's LEED program. Another well-trod track for architects who have advocated green issues in their firms is the AIA's COTE, which exists as one of the AIA's "knowledge communities" with branches in the many local chapters.

"BEING DIRECTOR OF SUSTAINABILITY IS A LARGER ROLE, WITH MORE ACCOUNTABILITY," SAYS RNL'S TOM HOOTMAN.

Sandy Mendler, AIA, a sustainable principal in HOK's San Francisco office, exemplifies both this persona of the early adopter and the USGBC advocate. Her interest in sustainability dates back to when she joined HOK in the early 1990s, when she helped develop the firm's sustainable-materials database and went on to write with her colleague William Odell what became the *HOK Guide to Sustainable Design*, originally published in 2000. In those days, Mendler says, her work was motivated by a need to define *sustainable design* for the firm, since LEED wasn't established and there were few guides for understanding the emerging green market. Mendler, a member of the USGBC's national board of directors, currently spends most of her time leading project design, with only part of her job given to research and advocacy for sustainable issues. "I think a lot of people find themselves in the role of director of sustainable design out of their desire to raise the issue, but didn't intend to find themselves not doing projects anymore," Mendler says.

Although HOK, like Gensler and RNL, has multiple offices, its model for sustainable design practice is more like a network, with sustainable principals and directors in many offices, each with their own interests and focus. HOK's sustainable network of architects includes those who don't solely design, who can play a more supporting role on projects and help to guide the introduction of new technologies and materials into practice. This is true at many firms. At Gensler, Ritchie has recently developed what she calls a "swiki," or a sustainability wiki, as a platform for sharing knowledge throughout the firm faster than preparing white papers or design guides. It's also a way to keep the firm's design knowledge on the cutting edge, as new technology and approaches can be added to the swiki. RNL has something similar with a green blog and a monthly internal e-mail blast focused on green products.

At HOK, the firm's sustainable leaders now focus less on developing things like the materials database and more on creating an advanced understanding of sustainable design and its implications on a variety of the firm's projects. "I occasionally provide a peer review role, but I prefer not to do the sustainability consultant role," Mendler says. "We're focused on integrated design, and it's important for the design *team* to address those goals." She says lately a key piece of the practice's work has been its support of postoccupancy evaluations of its own projects. "Based on the positive reaction from our clients, we are working to institutionalize this on each of our projects," she says.

For firms where every project isn't incorporating green strategies, sustainable design directors can take this long-haul approach—where the firm maintains an active role in a project from its inception and well into its occupancy—to both ensure consistency and also support the firm's goals for true integrated design. An internal sustainability consultant, working hand-in-hand with design architects, sends a message to clients that the firm is committed to implementing its lofty green principles.

John Ware, AIA, thinks it's difficult to play both the role of project architect and sustainability consultant, particularly on large projects. Ware joined Kansas City, Missouri–based 360 Architecture in September 2007 as the firm's sustainability coordinator, having previously worked as an environmental consultant and as vice chair of the city's volunteer Environmental Management Commission. "It's an important distinction from a client's point of view that a firm with in-house expertise can do green design as part of an integrated process," Ware says, adding that it can be tough to achieve design integration with outside sustainability consultants. Although his plans at 360 include embedding sustainable design tactics into every aspect of the firm's business, he doubts his job will become redundant any time soon.

McDonough's Gould agrees that it's unlikely that as green design becomes more mainstream this emerging role of the sustainability director would fade away, especially given that she finds architects, contractors, and particularly clients who still consider the sustainable design movement just another passing fad. However, she does note that the firms who are winning AIA/COTE awards and industry recognition tend to be firms that have sustainability embedded in their entire business strategy. Awards may not pay the bills—and Brad Pitt has yet to win an Academy Award—but as the market for green buildings expands, the need for sustainability gurus will follow. ■

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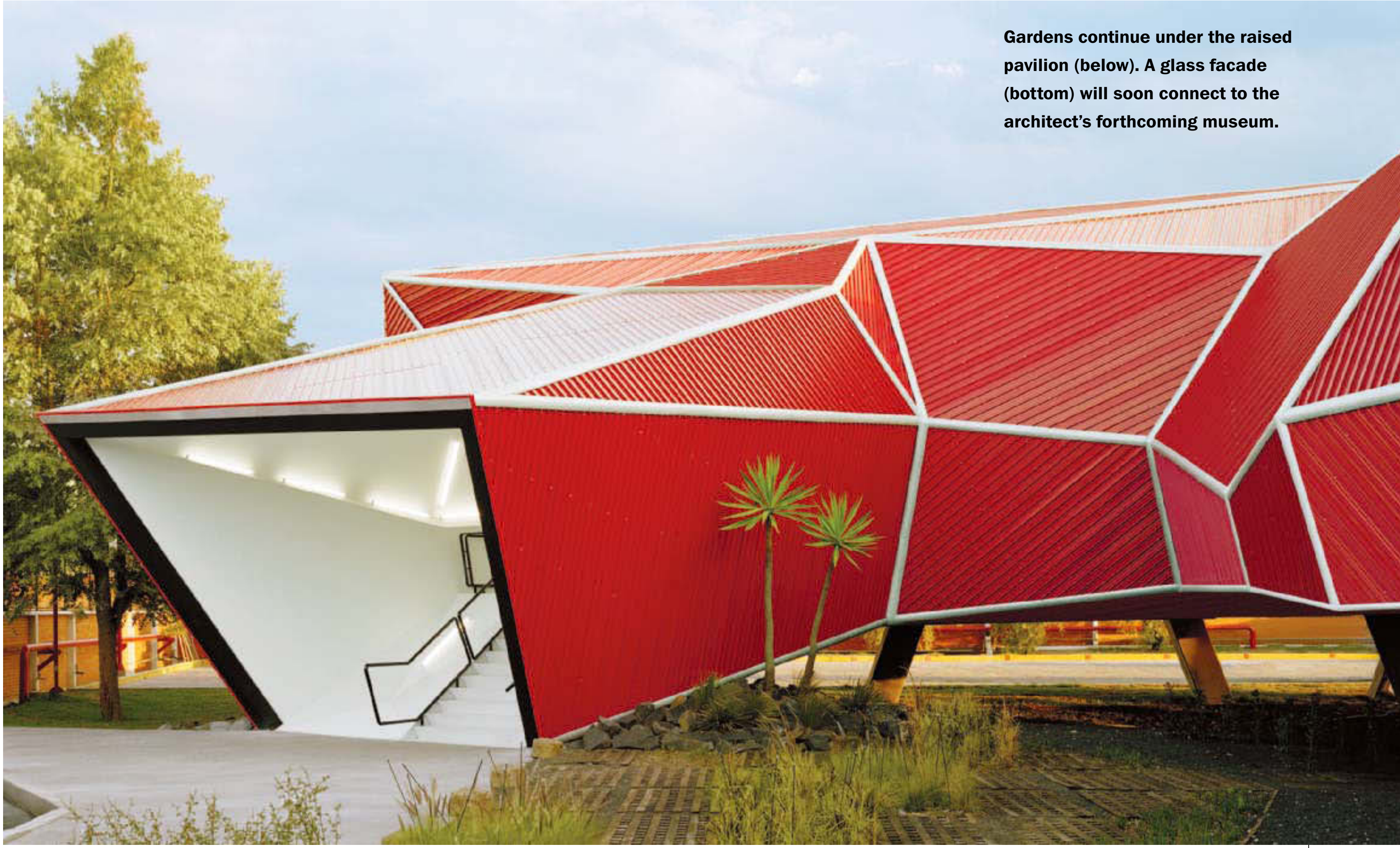


Gardens continue under the raised pavilion (below). A glass facade (bottom) will soon connect to the architect's forthcoming museum.

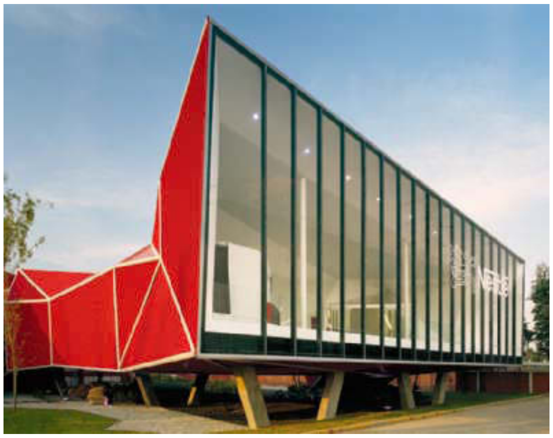
Eye candy sweetens the pot for young visitors

By Beth Broome

When Charlie Bucket finally gained entrance to Willy Wonka's chocolate factory, what he found belied the building's forbidding exterior: a magical world of colors and tastes beyond any child's wildest dreams. Architect Michel Rojkind [RECORD, December 2005, page 106] has injected some of this same fantastical sensibility into Nestlé's Toluca, Mexico, chocolate factory, a dreary manufacturing plant along the Paseo Tollocan motorway, about 40 miles outside Mexico City.

The decidedly unconventional project sprang from rather conventional beginnings. Rojkind Arquitectos was invited by the chocolate maker to participate in a competition for an intervention within the factory intended to promote school visits. Rojkind looked at the project from a child's perspective: "You've driven 40 minutes," he says, "you're expecting something fascinating, and you arrive at this place that looks like any old factory. It could be a pencil factory, a shoe factory." The architect wanted to take the project beyond its interior scope. "Why not create the first chocolate museum in Mexico and have a 300-meter long, billboardlike facade along the motorway," he proposed. Nestlé bought the idea. In this first phase, the Nestlé Chocolate Pavilion—which includes a reception area, auditorium, and gift shop—provides a grand entrance to the existing steel and brick factory (another architect took on the visitor's center and production-viewing catwalk within the building) and will eventually connect to the museum, the design phase for which is scheduled to commence next year.

Introducing a completely new program this late in the game came at a price, however. The client had already committed to an opening date for the visitor's center, so Rojkind's team would have to design and build the entry pavilion in two and a half months. "It was lots of fun," says



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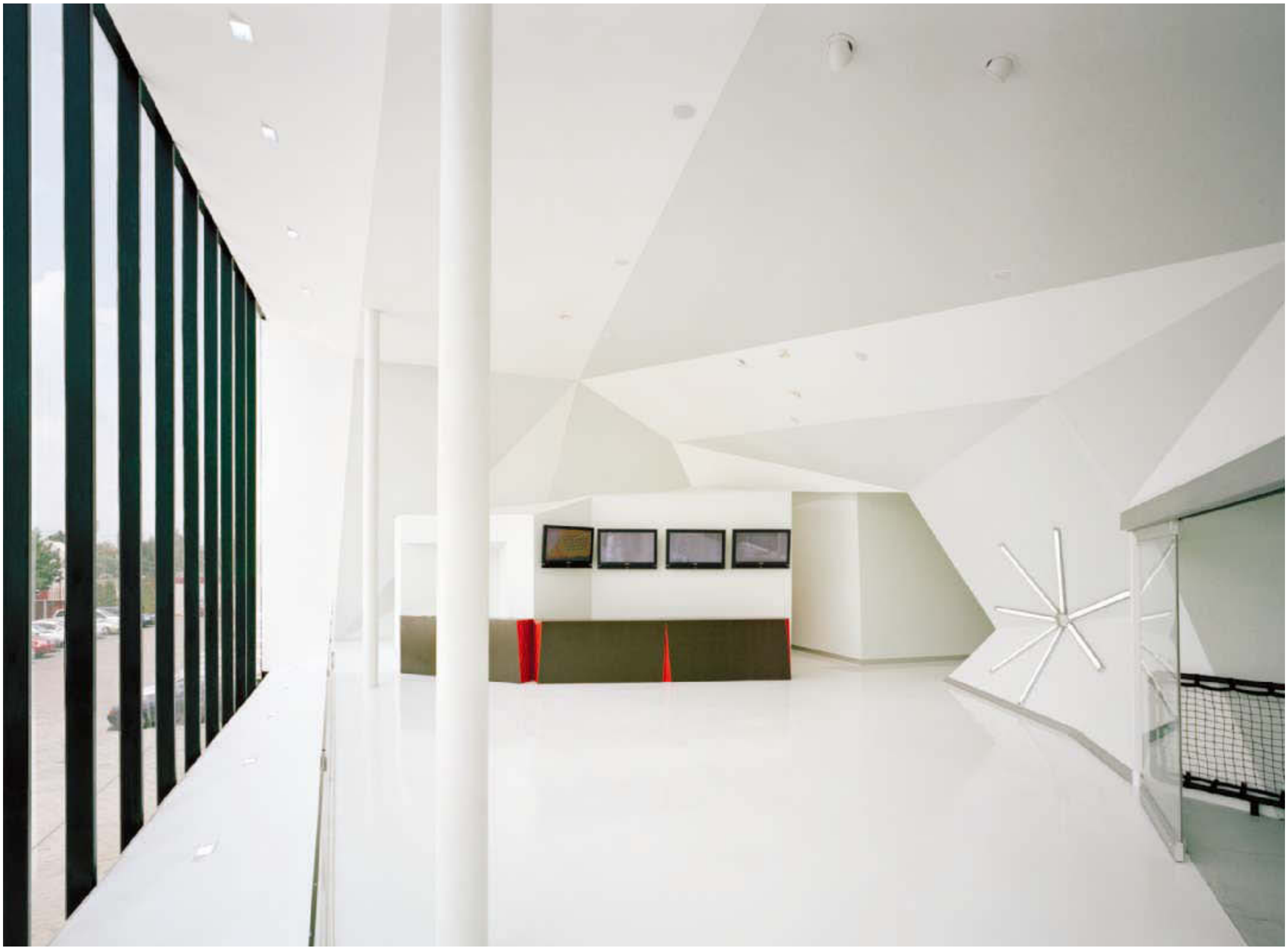
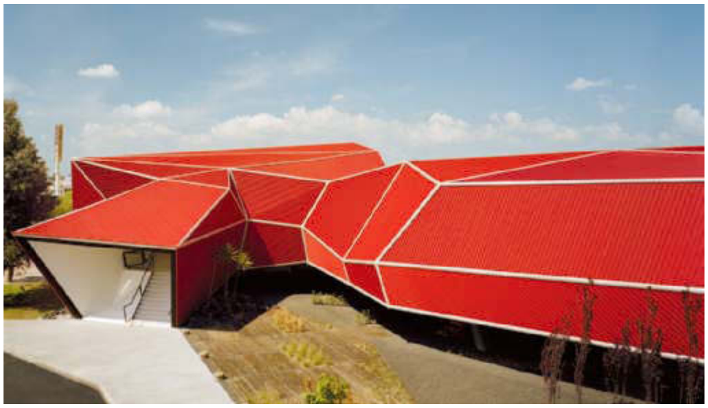
The stark interior (below) contrasts with the playful exterior (bottom) and builds visitors' anticipation as they proceed on the chocolate-factory tour.





Rojkind, "but the times were crazy." Builders were on-site working three 8-hour shifts a day. The architect stopped producing drawings at the office and started drawing on-site and working with the fabricators directly. "There was no prefabrication. There was no time," Rojkind says. The upside? In order for the project to be delivered on schedule, the client would have to refrain from making changes along the way. "That created a lot of freedom and a trusting relationship," says Rojkind. "We ended up building the first scheme we presented."

That scheme emerged into a 7,000-square-foot sweet, encased in a bright red wrapper, that zigs and zags along the highway. The folded form hangs off a steel structure and sits 9 feet off the ground on poured-in-place concrete columns, its corrugated-aluminum exterior, painted Nestlé's trademark red, acting as a beacon for the brand. A large glass facade, which looks out onto the motorway, will eventually link to the forthcoming museum. An almost antiseptic interior features white origamilike walls and poured-in-place concrete floors with a white resin finish. Fanciful fluorescent tube lighting, artificial grass carpet, and chocolate-shaped seating play off the spaceship aesthetic and build visitors' anticipation as they proceed into the factory.

With the Nestlé Chocolate Pavilion, Rojkind has pulled off a neat trick: By giving the clients something they didn't even know they needed, he has been able to ignite not only young visitors' fantasies, but his own, as well. ■

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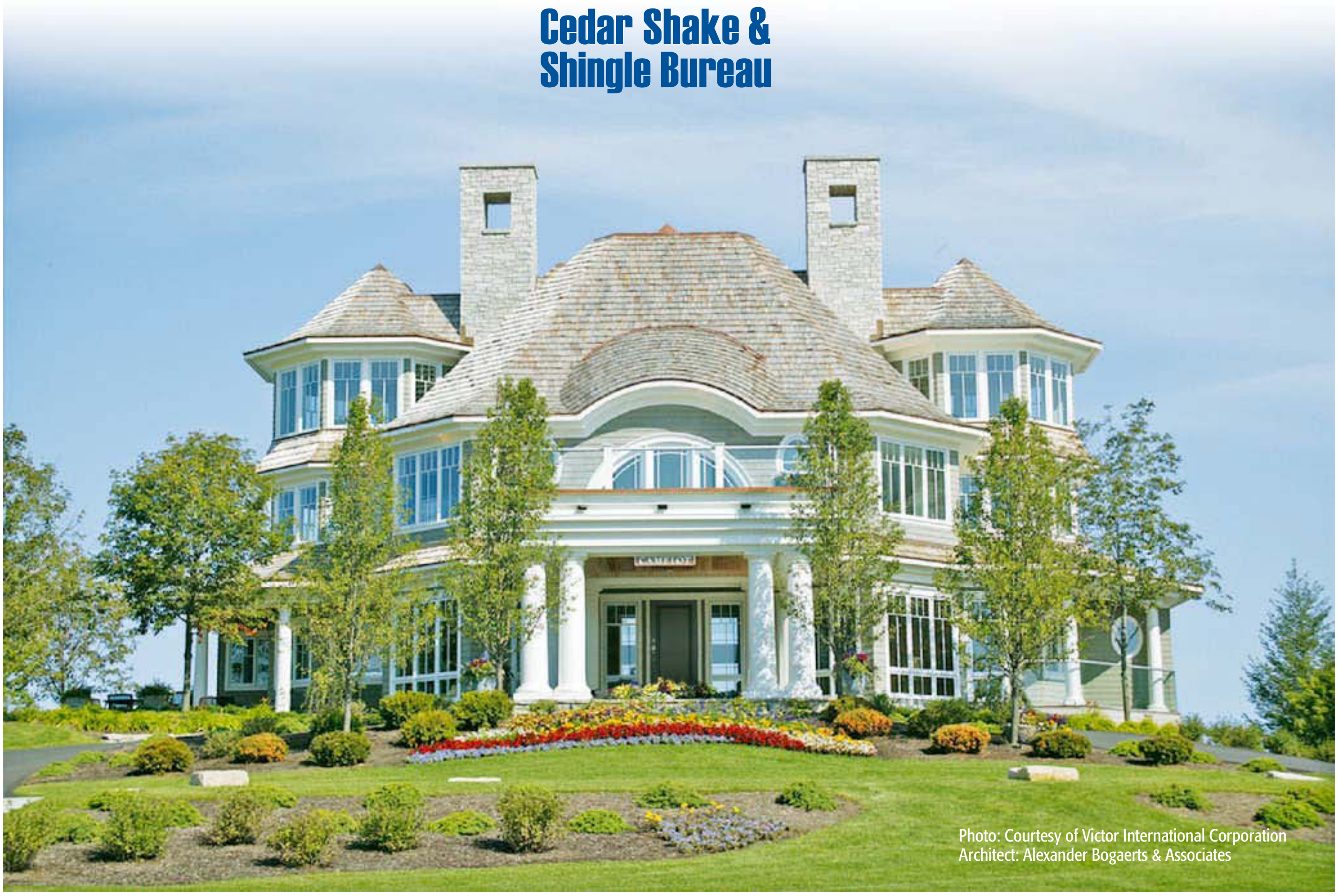

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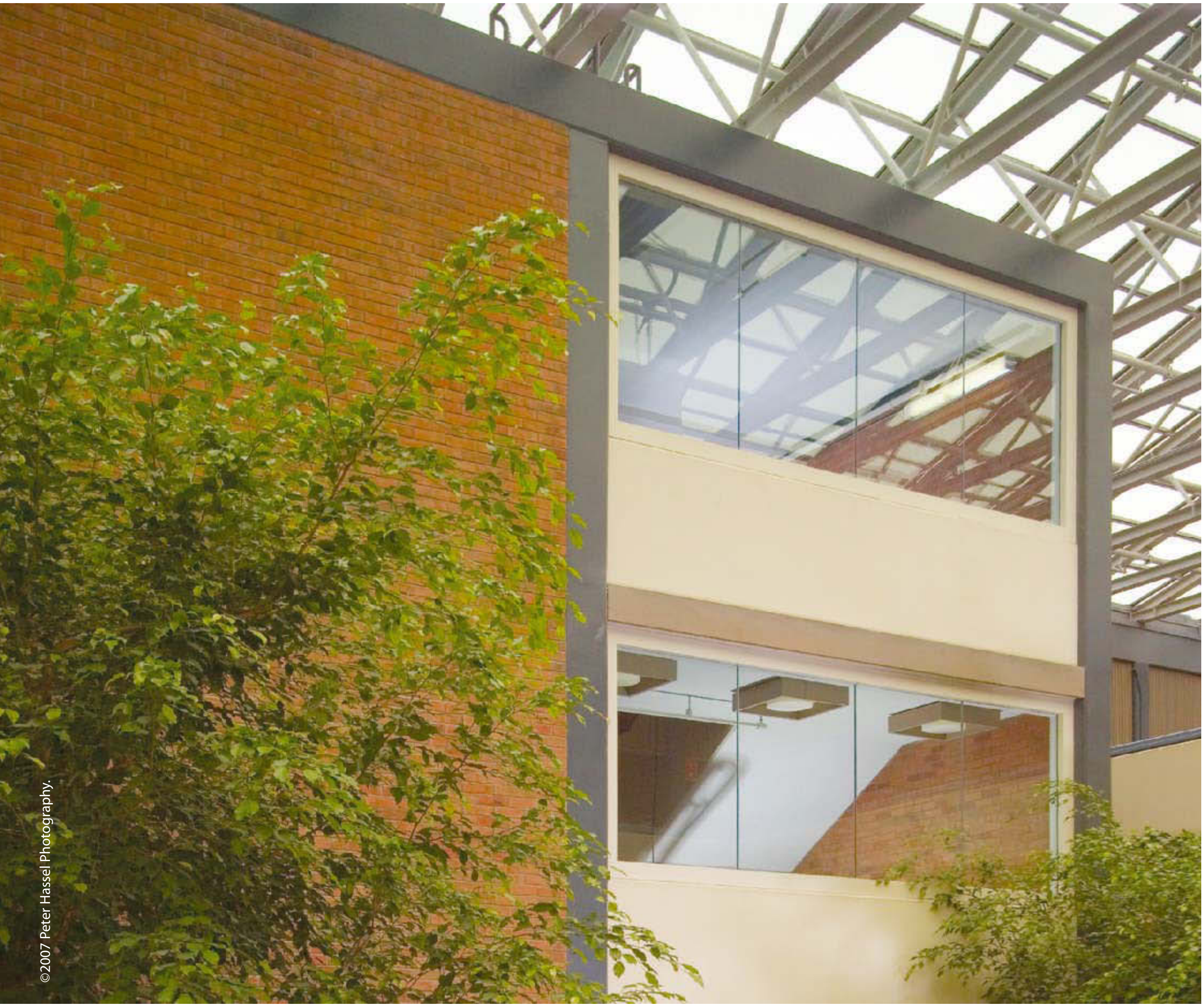

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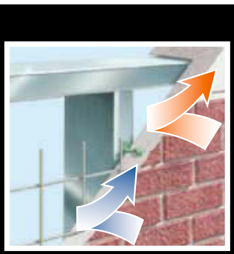

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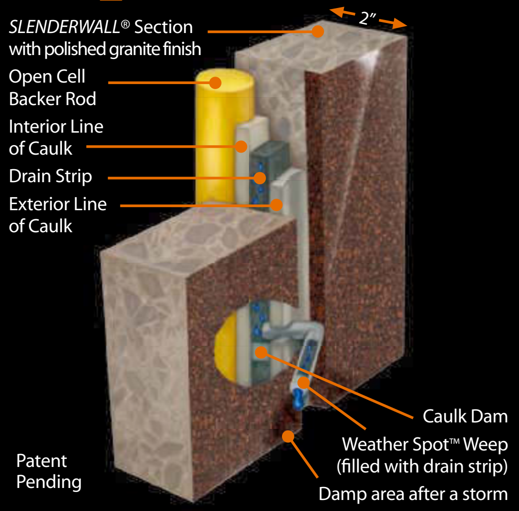

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Good Design Is Good Business

The 10th BW/AR Awards

This year, 10 buildings mark 10 years of business design recognition

By Christopher Kieran

FEATURE

WINNERS

Navy Federal Credit Union
ASD

Young Centre for the Performing Arts
Kuwabara Payne McKenna Blumberg Architects

U.S. Census Bureau Headquarters
Skidmore, Owings & Merrill

InterActiveCorp Headquarters
Gehry Partners and STUDIOS Architecture

FINALISTS

Gardiner Museum
Kuwabara Payne McKenna Blumberg Architects

Four Seasons Centre for the Performing Arts
Diamond and Schmitt Architects

SJ Berwin
HOK International

San Diego Padres Ballpark
Antoine Predock

Hubbell Lighting Headquarters
McMillan Smith & Partners Architects

Hearst Tower
Foster + Partners and Gensler

When ARCHITECTURAL RECORD published the first *BusinessWeek*/ARCHITECTURAL RECORD Awards in its October 1997 issue, the jury of well-known C.E.O.s and architects expressed its disappointment that more high-profile projects were not submitted. RECORD and *BusinessWeek* wanted to show their respective readerships what architects and clients can really do for one another. But, as jury member Craig Hodgetts said at the time, there was virtually no crossover between the media communicating to the two groups. “And that is the crux of the problem posed by these awards,” wrote Karen Stein in her introduction. “While the program may eventually focus on accomplishment, so far it has succeeded more in posing a challenge for an idealized client-architect relationship.”

This year, as RECORD and its sister publication *BusinessWeek* joined for the 10th time to recognize successful collaborations of great architects and great businesses, 10 buildings emerged from a pool of projects large and small, some of which had even graced RECORD’s pages in previous months. Although the jury selected only 10 buildings as this year’s winners and finalists, these projects make it clear that architecture can improve any kind of business. Whether it’s a manufacturer, a sports team, a law firm, a performance company, a federal service, a museum, or a Web brand conglomerate, smart businesses thrive on smart design solutions.

In 10 years, more than 100 buildings have earned BW/AR awards, reminding us what happens when the right architect meets the right business. Looking back at the introduction of the first annual awards, the program’s mission is worth repeating here: “With the recognition that creative management practices and creative design solutions go hand in hand to achieve successful business enterprises, the *BusinessWeek*/ARCHITECTURAL RECORD Awards were born. Our shared goal is to honor the very best expression of a client’s goals through architecture, rewarding the entrepreneurial spirit in both management techniques and physical form: Good design is good business.” *Christopher Kieran*

Christopher Kieran is a Philadelphia-based freelance writer.

PHOTOGRAPHY: © ALBERT VECERKA/ESTO

NAVY FEDERAL CREDIT UNION HERITAGE OAKS CENTER

ASD

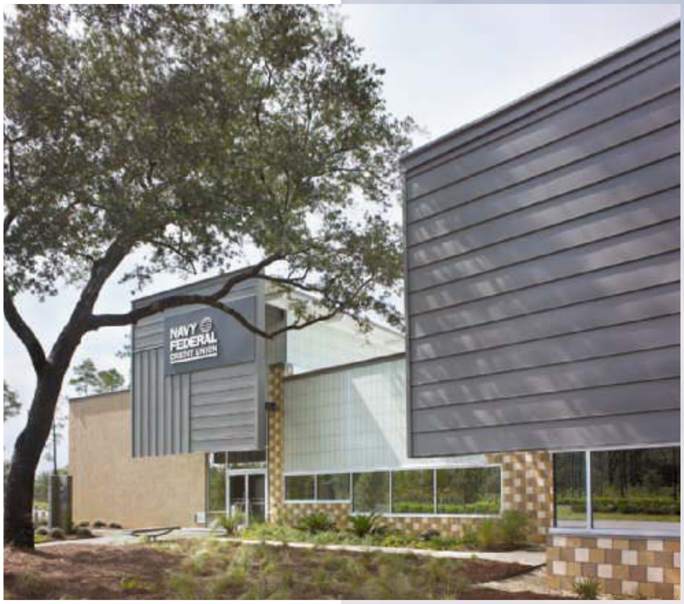
The Navy Federal Credit Union's (NFCU) new call center in Pensacola, Florida, is the greenest building on the winners list this year. The 62,000-square-foot structure at Heritage Oaks Commerce Park is only the second LEED Gold–certified building in the state. Architecture, interiors, and graphic design firm ASD provided comprehensive design services to kick-start what the world's largest credit union has come to call "the Pensacola Project."

The first in a future four-office-building complex, ASD's building includes fitness facilities with personal trainers, a health clinic, mothering rooms, dining services, training rooms, member services, conferencing, and data centers in addition to the call center. Like every business that wants a green building, NFCU sought to reduce energy expenses, but it also expected environmental initiatives to benefit employee well-being, aiming to reduce health-care costs and improve employee productivity and retention.

One of the first things people mention when speaking about the facility is the quality of the air indoors. The U.S. Green Building Council is still developing a design guide for air quality, but ASD saw no cause to wait. Air-filtration systems work in tandem with an enormous amount of oxygen-producing foliage, largely in the form of a wall of bamboo running nearly 400 feet through the center of the building.

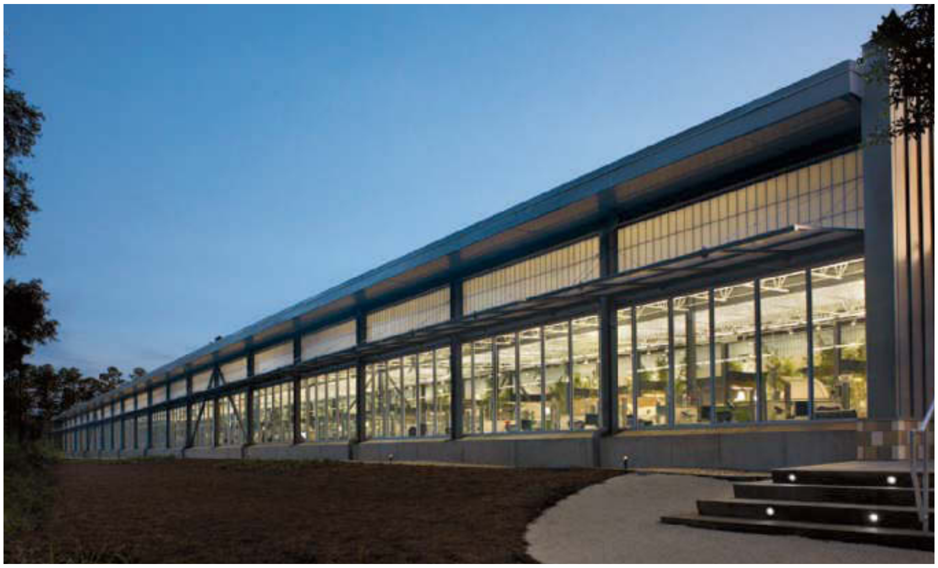
The orientation and organization of the simple rectilinear structure maximize views of the natural wetlands nearby, while minimizing heat gain in the warm Florida climate. The call center features a glass exterior running the entire length of the building. Circulation and support spaces buffer the room from southern and western exposure. High-performance wall panels form a solar shade and reflector at the window level, transmitting diffuse light into the work space.

The architects specified workstations that are 86 percent



The striking geometry of the two main entrances punctuates the simple rectilinear structure (above and opposite). A 400-foot, glass-and-translucent-paneled rear exterior brings natural light into the call center (below left).

Project: *Navy Federal Credit Union Heritage Oaks Center, Pensacola, Florida*
Key players: *ASD*
Client: *Navy Federal Credit Union*



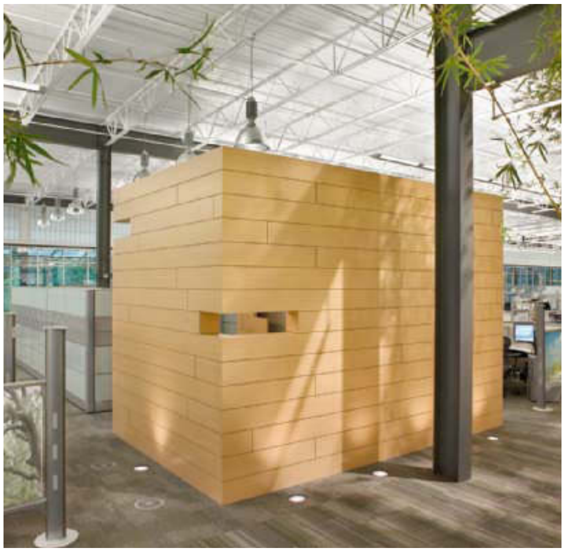
PHOTOGRAPHY: © MAGUIRE PHOTOGRAPHIC

recyclable and contain 27 percent recycled materials. The lightweight system features a series of screens and canopies stretched between poles to form low-rise personal space. ASD designed nature graphics to print on the screens. Arranging the workstations close to the window wall takes advantage of daylight as a lighting source, which the building manipulates and augments using automated shade devices and a system that adjusts the energy-efficient lighting fixtures depending on the daylight-harvest performance.

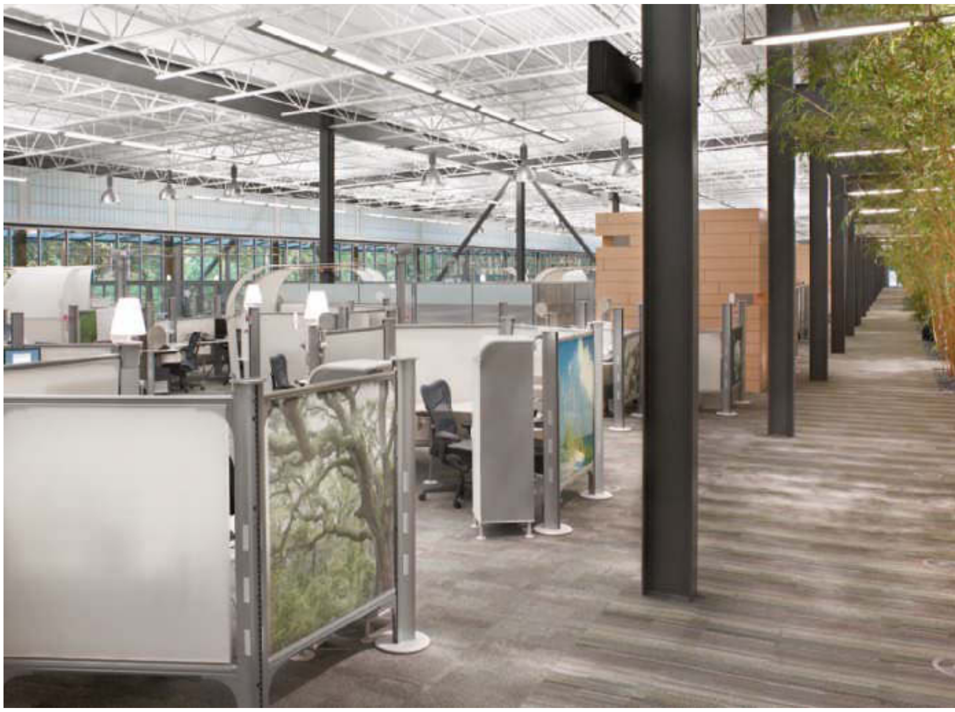
Further improving the workday experience, pressurized raised floors provide two air diffusers for each employee, with individualized heating and cooling controls. A fitness trail around the site encourages jogging and walking. Along the trail, gazebos with benches provide quiet places to work on a nice day.

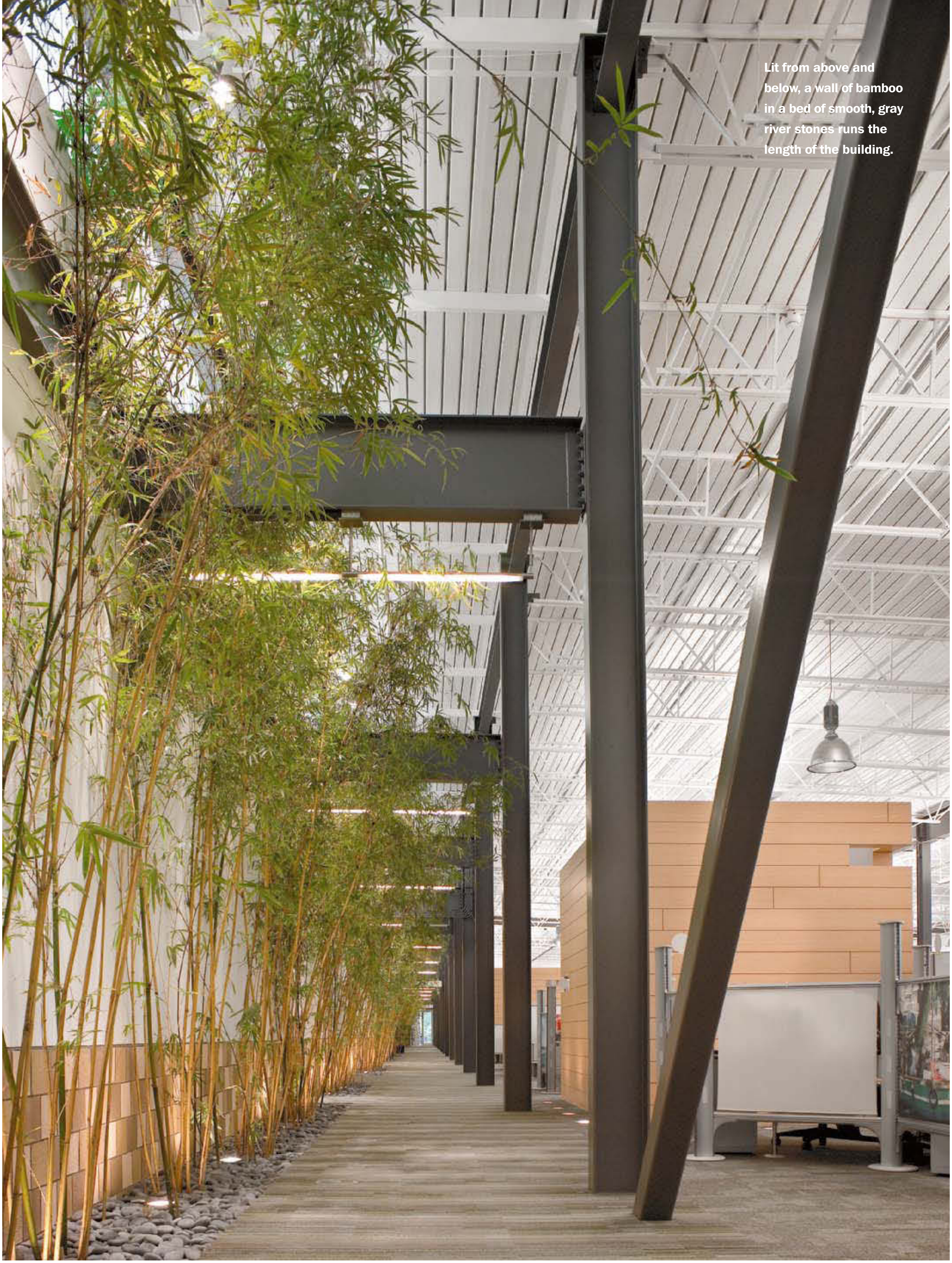
Many businesses hesitate to take on the initial cost required for a LEED Gold building, but Navy Federal has found the result worth repeating. ASD is now completing two additional NFCU buildings at Heritage Oaks totaling 300,000 square feet, and expects each to earn LEED Gold certification at a minimum.

Navy Federal recruiters testify that their job has become easier. Many new applicants come referred by satisfied employees. NFCU reports reduced employee turnover compared to its other operations centers. The company is also monitoring the Pensacola project's energy, water, maintenance, and operation costs to measure against its other call centers, hoping that it will continue to find that good design promotes well-being and builds stronger business.



Efficient lighting systems adjust in response to the amount of daylight in the call center. ASD graphic designs are printed on screens stretched to form lightweight workstations.





Lit from above and below, a wall of bamboo in a bed of smooth, gray river stones runs the length of the building.

YOUNG CENTRE FOR THE PERFORMING ARTS
Kuwabara Payne McKenna Blumberg Architects

This year's awards recognize an exceptional amount of first-rate architecture rising in Toronto. Of the many contributions to the city's cultural fabric, the intimate, low-budget Young Centre for the Performing Arts stands out.

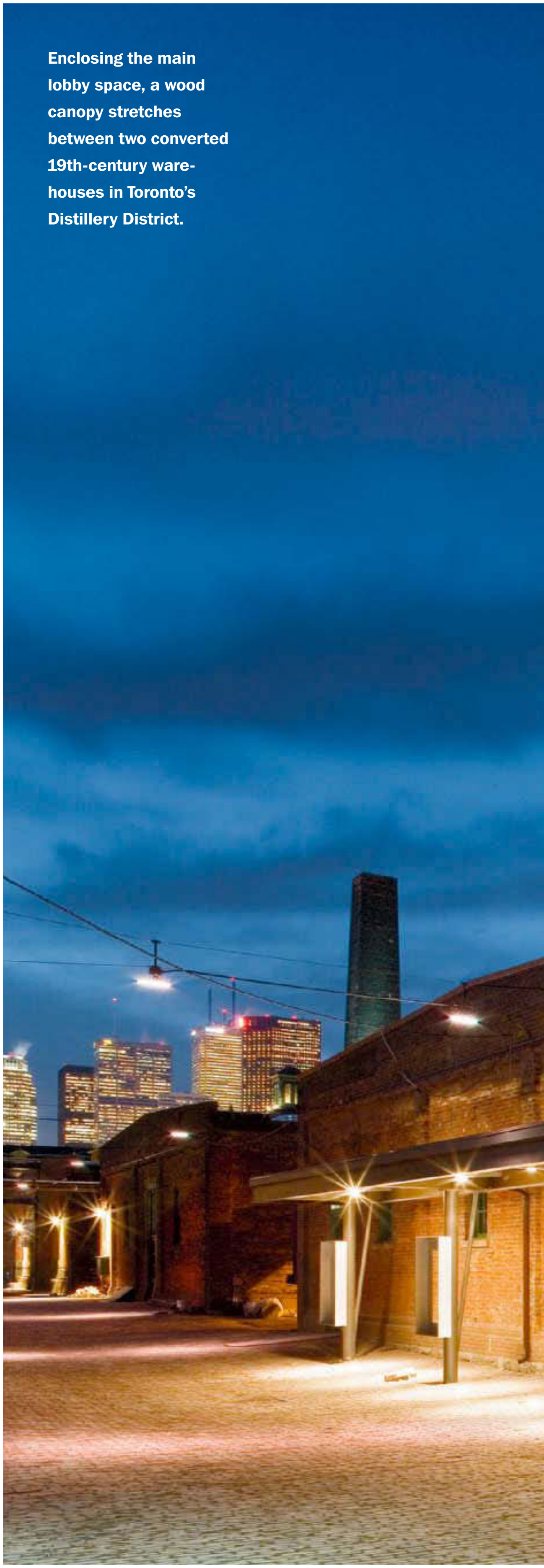
The project's two clients, Soulpepper Theatre Company and the George Brown College Theatre School, partnered to consolidate and improve their facilities, which had been less than adequate. Working with Toronto-based Kuwabara Payne McKenna Blumberg Architects (KPMB), the partnership created a unique collaborative space, which raised the college's public profile and doubled Soulpepper Theatre's ticket sales and annual budget.

Located in the Distillery District, an old industrial neighborhood that is transforming into an arts precinct, the Young Centre consists of two converted 19th-century brick tank houses. A horizontal wood canopy joins the two converted structures, housing a café/bookstore space, which provides additional revenue by remaining open when performances are not in progress.

The 45,565-square-foot facility incorporates four flexible performance venues. In the theaters and throughout the building, the aesthetic is utilitarian and economical. KPMB treated the existing brick warehouses as "found objects," leaving the masonry walls exposed to provide a consistent backdrop. The architects preserved original windows, as well as the existing cobblestone pavement at the building's front.

The clients mutually benefit from the new partnership and the new building. The students of George Brown College appreciate the rare opportunity to share a home with professional actors, sit in on Soulpepper rehearsals, and attend performances for free. The theater company finds its repertoire augmented by the raw authenticity of the space. Soulpepper's

Project: *Young Centre for the Performing Arts, Toronto, Canada*
Key players: *Kuwabara Payne McKenna Blumberg Architects*
Client: *Soulpepper Theatre Company; George Brown College Theatre School*

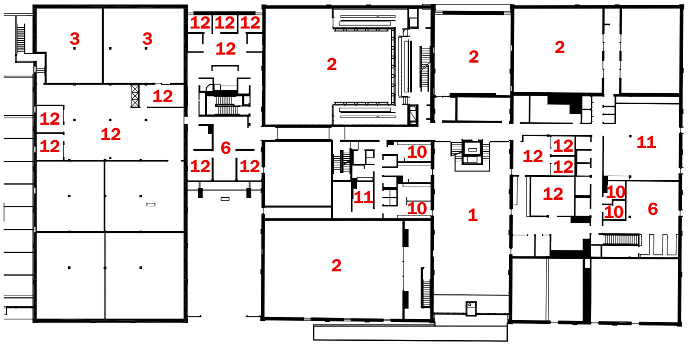


Enclosing the main lobby space, a wood canopy stretches between two converted 19th-century warehouses in Toronto's Distillery District.

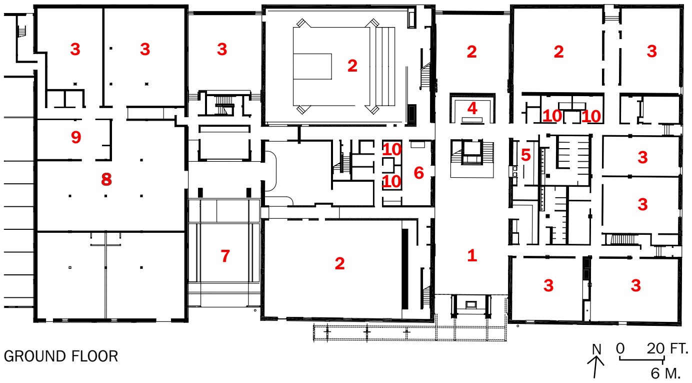
founding artistic director, Albert Schultz, describes the experience of performing at the Young Centre with deep satisfaction. “The relationship between the performer and the audience is one of remarkable intimacy. The acoustical qualities of the space are equally remarkable. An actor can speak conversationally and be heard. The sound is alive but never rings. But perhaps most remarkable is the warmth of the space when an actor looks into the house. These qualities are extremely rare individually. Together they are a miracle.” To celebrate these qualities, Soulpepper staged Thornton Wilder’s *Our Town* as its inaugural play, using the playwright’s specifications—no scenery or theatrical devices.

In their first year of operation, the new facilities enabled Soulpepper to increase the number of its productions by 80 percent and its total performances by 116 percent, resulting in an overall attendance increase of 103 percent. Owning a dedicated venue also gives the company direct access to its customer database, allowing for more direct marketing, customer analysis, and fund-raising efficiency.

The clients and patrons aren’t the only ones pleased with the Young Centre. The industrial palette of redbrick and dark timber reflects that of the surrounding community, which benefits from a raised public profile. The influx of theatergoers increases revenues for local businesses and attracts new galleries, restaurants, and shops. The continuing contribution to the district’s identity as an artistic center evidences good design’s ability to add vitality to a client’s operations and also those of a larger community.



SECOND FLOOR



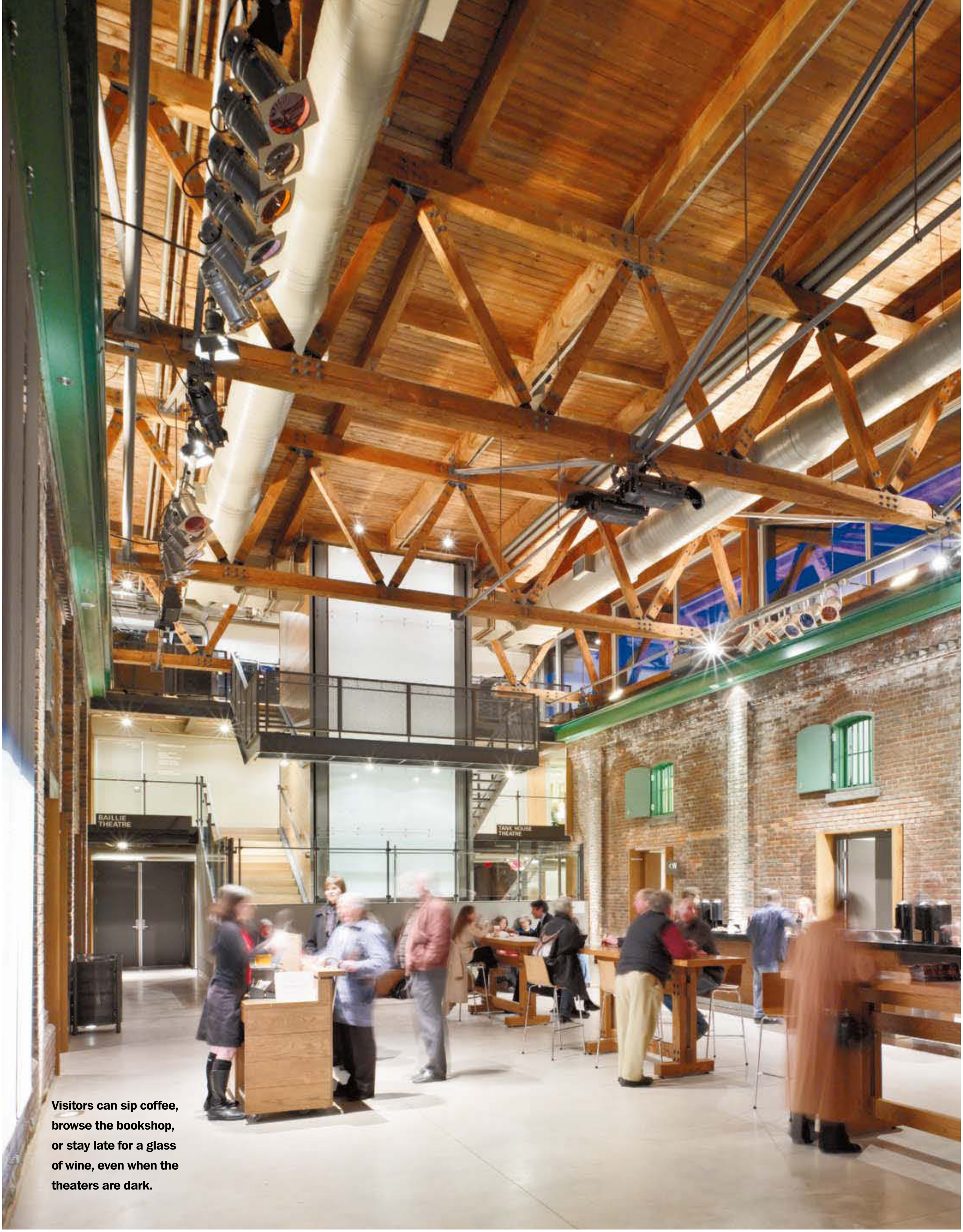
GROUND FLOOR

1. *Lobby*
2. *Theater*
3. *Studio*
4. *Bookstore*
5. *Box office*
6. *Lounge*
7. *Courtyard*
8. *Scenery shop*
9. *Prop shop*
10. *Dressing room*
11. *Wardrobe*
12. *Office*

SANDRA FAIRE AND IVAN FECAN ATRIUM

Theatergoers sit by a fireplace in the lobby (above) before assembling in one of the Young Centre’s four flexible performance spaces (right).

PHOTOGRAPHY: © TOM ARBAN


BAILLIE THEATRE
TANK HOUSE THEATRE

Visitors can sip coffee, browse the bookshop, or stay late for a glass of wine, even when the theaters are dark.

UNITED STATES CENSUS BUREAU HEADQUARTERS

Skidmore, Owings & Merrill

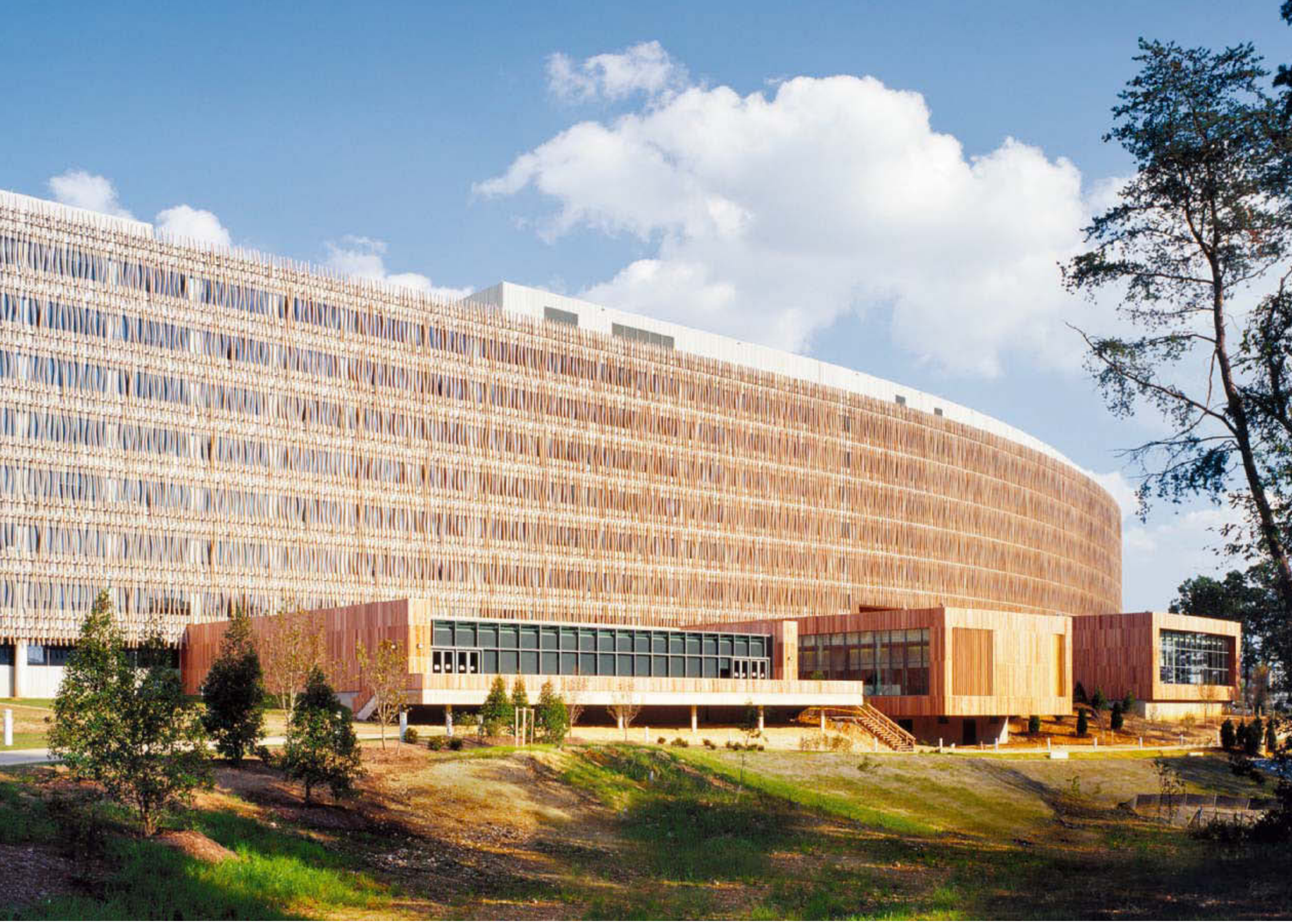
With the U.S. Census Bureau having outgrown its aging 1942-vintage home in Pensacola, Florida, the General Services Administration commissioned Skidmore, Owings & Merrill (SOM) to design a new, 2.5-million-square-foot headquarters on an adjacent, 80-acre wooded site [RECORD, March 2007, page 130]. A series of accessible green roofs and gardens unfold from the center of the site out to the adjacent woodland preserve, integrating the expansive, low-rise structure into its wooded site.

An iconic sunshade fronting the woodland side of the building mimics the forest with gently curved planks of FSC-certified white oak. Draping the building in such a natural material, SOM explores the language of sustainable design and makes the large complex appear accessible.

The Census Bureau staff, consolidated from six locations, enjoy on-site amenities, including individual climate control for workstations. A covered walkway from the building to the Metro station encourages employees to use public transportation, although 3,000 parking spaces can accommodate the entire staff, except during census years, when the number of employees doubles. Views of the natural surroundings and courtyard park from workstations oriented toward large windows have improved the workday experience and made the agency more attractive to potential employees.

By developing a visual language of sustainability, SOM has shown how new requirements for federal buildings can be used as design assets. In addition, the agency has found that its new home allows it to operate more efficiently. Nestling into its wooded site, this very large building has found a way to stand out by fitting in.

Project: *United States Census Bureau Headquarters, Pensacola, Florida*
Key players: *Skidmore, Owings & Merrill*
Client: *U.S. Census Bureau, General Services Administration*



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Comparable in size to the World Trade Center in New York City, the 2.5-million-square-foot, eight-story complex rests comfortably in its setting, partly due to the sunscreen of curved wood planks that softens the structure's massive volume and ties it to the site.

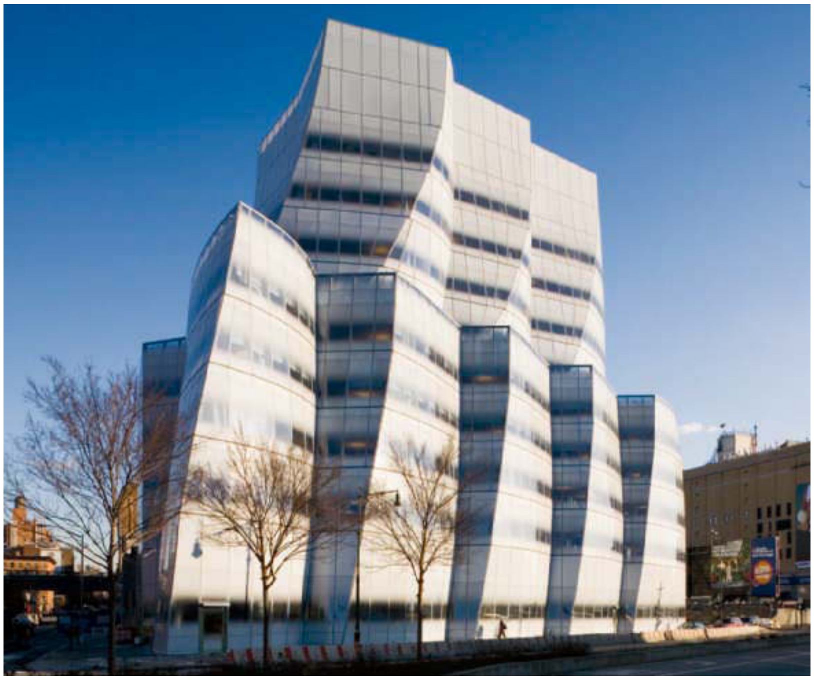
IAC HEADQUARTERS
Gehry Partners and STUDIOS Architecture

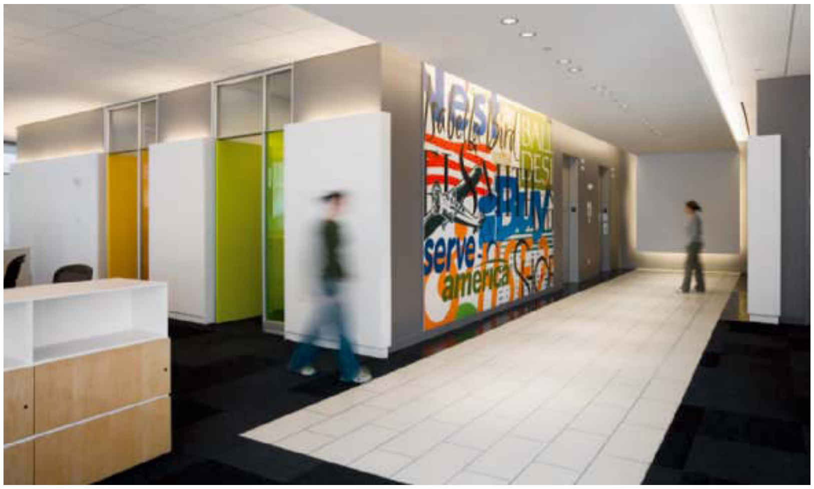
Frank Gehry's first New York building, the highly anticipated InterActiveCorp (IAC) Headquarters [RECORD, October 2007, page 112], has been likened to the flowing pleats of a skirt, or the billowing sails of a ship floating along the Hudson River. The 10-story building near the Chelsea Piers Sports Center has fans and critics wondering what it says about the direction of the architect's work. Meanwhile, the client is thriving and finds its own creative enterprises stimulated by the unique plan of its new facility.

IAC is an electronic and new-media conglomerate that includes the Home Shopping Network and more than 60 Web-oriented brands, such as Ticketmaster, Expedia, Lending Tree, Citysearch, and Match.com. The new IAC Building's dynamic form reflects the aggregation of these diversified brands under one roof. STUDIOS Architecture's interior design makes clever use of customized, 120-degree workstations that stretch out across the irregular floor plates, folding into the unusual spaces created by the building's fluctuating envelope. Contrasting the ethereal palette of the curtain wall, STUDIOS punctuated the muted interior spaces with incidents of color, developing an eclectic aesthetic to suit the client.

IAC is among a number of forces stoking the revitalization of the West Chelsea neighborhood. Opening up to its new neighbors, the ground floor of the IAC is a "living room" space for the community. Galleries and nonprofit organizations host events in the lobby, which boasts one of the world's largest HD-quality rear projection screens.

Gehry may not have stamped his long-awaited signature onto the New York skyline, yet with IAC he has created a building that brings identity to a neighborhood in flux and to a corporation whose distinct entities can now function as a more effective conglomerate.





Project: *IAC Headquarters, New York City*
Key players: *Gehry Partners; STUDIOS Architecture*
Client: *InterActiveCorp/IAC*

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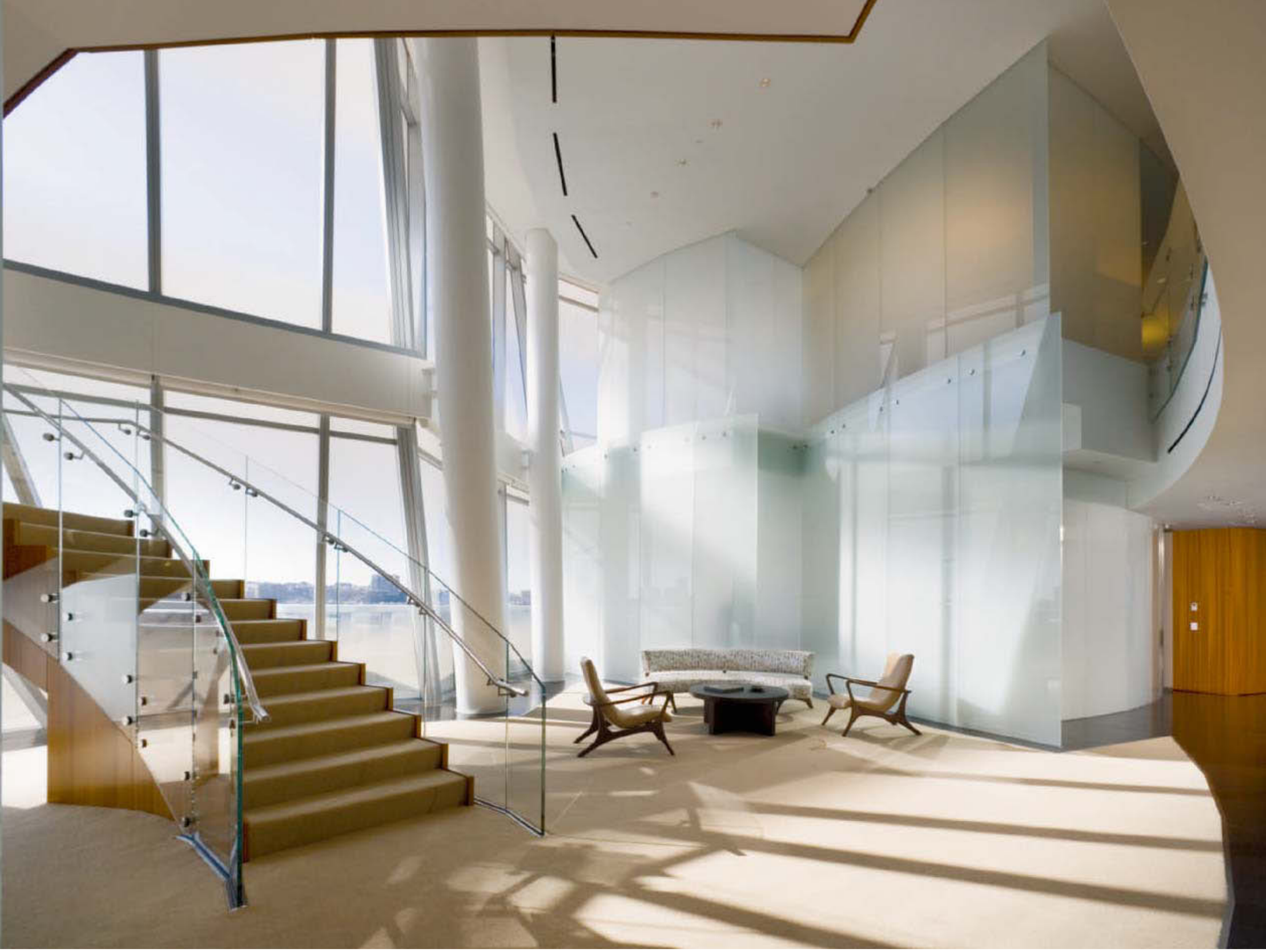
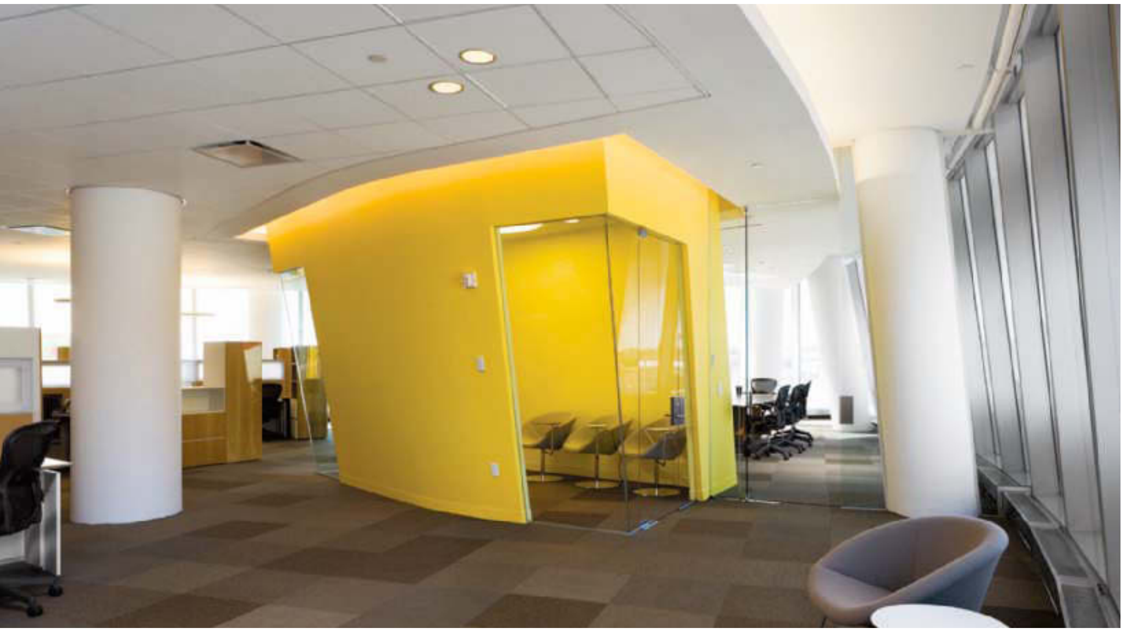




Gehry designed the interior of the two executive floors, which are connected by a curving glass-and-steel stair (above). STUDIOS Architecture designed all of the other interiors, using an eclectic mix of colors and materials for typical office spaces (left).

GARDINER MUSEUM
Kuwabara Payne McKenna Blumberg Architects

Canada's only museum devoted entirely to ceramics, the Gardiner Museum reopened in June 2006 after a 30-month renovation and expansion. Located in Toronto, just south of the city's high-end retail district, the museum's original 1984 building proved deficient in various respects. Kuwabara Payne McKenna Blumberg Architects (KPMB), whose Young Centre for the Performing Arts is a winner in this year's awards, designed a 14,000-square-foot addition and worked with the museum to make a facility capable of supporting the institution's anticipated growth.

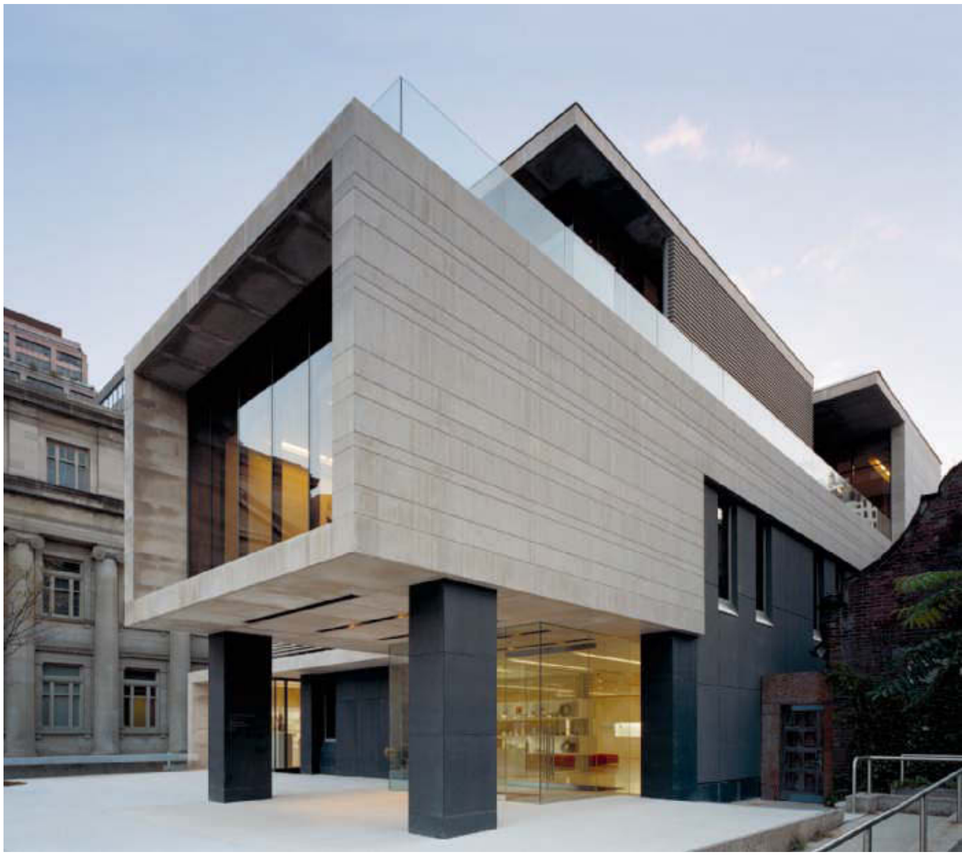
Set back from the street to protect sight lines of neighboring historic buildings, the former Gardiner Museum suffered from limited visibility. Floor-to-ceiling windows on the new facade, however, make the building more inviting. The large glass walls frame and reflect nearby Neoclassical buildings, juxtaposing them with the Gardiner's polished buff limestone surfaces, creating a dynamic visual experience. KPMB also designed a series of terraced platforms that use landscaping to bring the museum to the street.

In addition to expanding curatorial and exhibition space, the Gardiner aimed to be more of a cultural destination by enlarging its retail shop and opening a restaurant managed by local celebrity chef Jamie Kennedy. In the new shop, white floors, walls, and ceilings draw attention to brightly colored merchandise arranged on spacious white shelves, appearing to float between panes of glass.

All the elements of the building come together in the restaurant, where the gray stone found on the building's exterior, and the wood floors and white ceilings from the galleries are assembled and contrast with one another. Large red ottomans, which enliven the galleries and shop, also punctuate the dining room's muted earth tones and textures. Having met with critical acclaim from *Food & Wine* and *Bon Appetit* magazines, the restaurant has succeeded in attracting a broader audience to the museum.

Prior to this project, the Gardiner found itself lacking the infrastructure to augment an active schedule of exhibitions and programs and to accommodate its growing collections. Three new galleries and larger education and research facilities, including some tucked into a former underground parking garage, give the museum space to showcase additions to its permanent collection. New Chinese, Japanese, and contemporary porcelain collections have been well received. A new special exhibition gallery enables the Gardiner to enter negotiations to house the Victoria and Albert Museum's ceramic collection while the London museum is renovated in 2009.

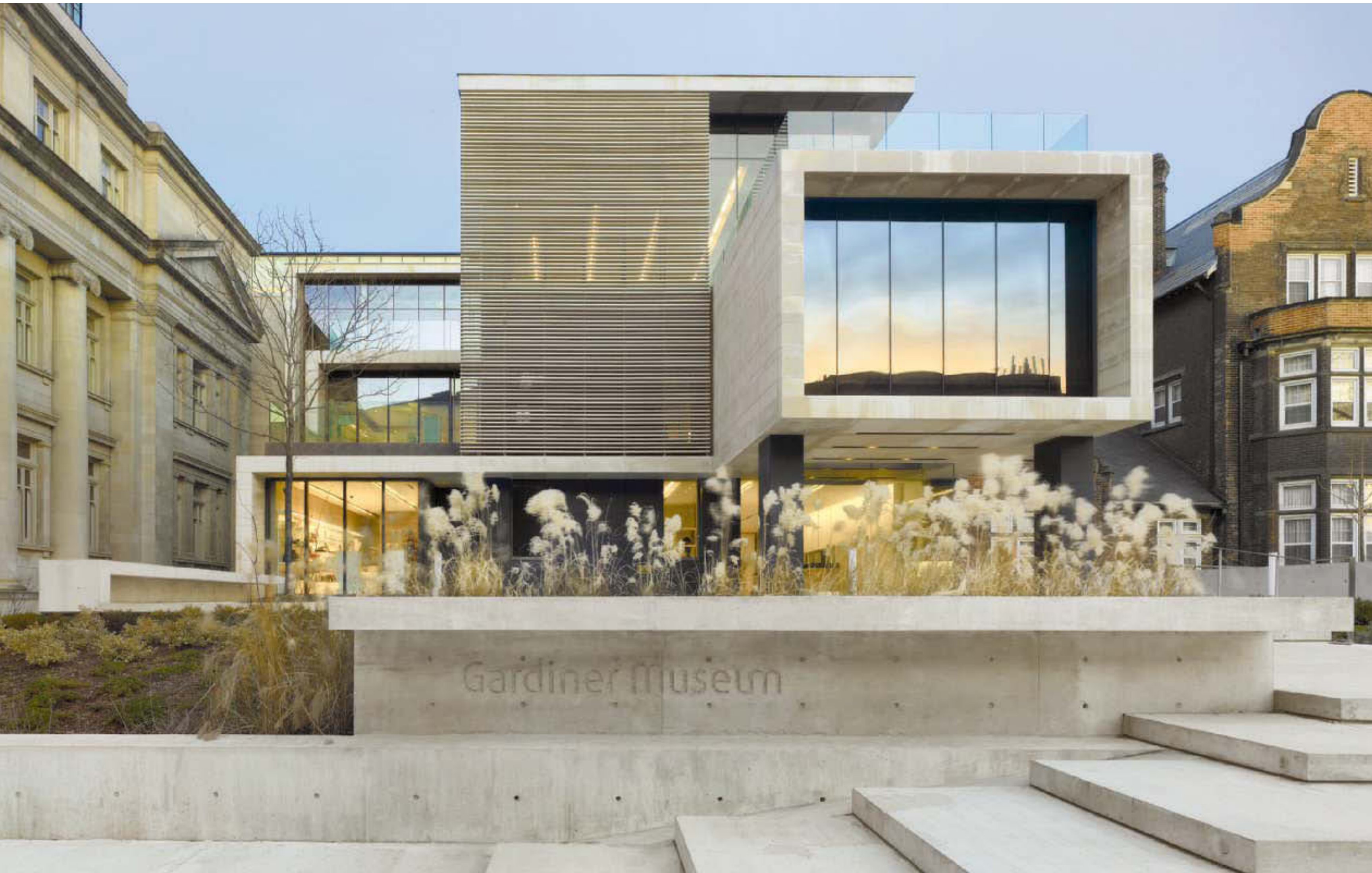
Featured in *Vogue* as the place to shop in Toronto, the Gardiner is reaping the benefits of good planning and design. Since reopening, the museum has seen a 20 percent increase in members and a 34 percent increase in membership revenue from the year before it closed for renovations. Attracting more visitors overall, the museum also saw a 95 percent increase in revenues from its shop and enjoyed the additional contribution of the restaurant. With its increased profile, the Gardiner has become a more important cultural resource for Canada, and its expanded facilities will enable it to continue growing.



Project: *Gardiner Museum, Toronto, Canada*
Key players: *Kuwabara Payne McKenna Blumberg Architects*
Client: *Gardiner Museum*

PHOTOGRAPHY: © EDUARD HUEBER/ARCHPHOTO, EXCEPT AS NOTED; SHAI GILL (OPPOSITE, BOTTOM)

Reaching out toward the street, the structure entices visitors inside, where a larger shop (left) and new restaurant (opposite, bottom) have transformed the Gardiner from a quiet ceramics museum to a cultural destination.



FOUR SEASONS CENTRE FOR THE PERFORMING ARTS

Diamond and Schmitt Architects

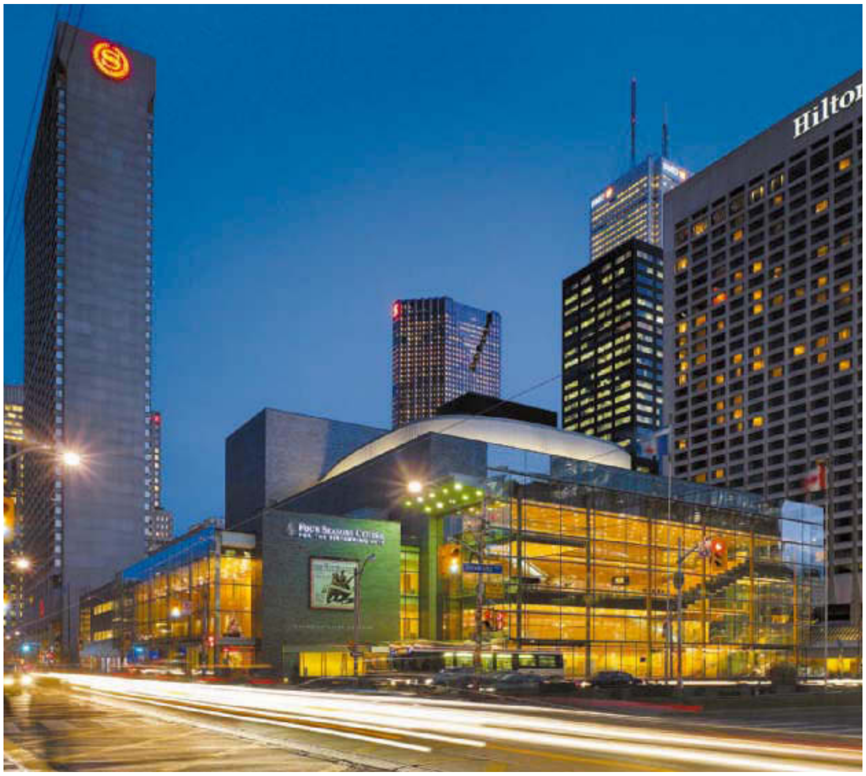
The Four Seasons Centre for the Performing Arts, the new home of the Canadian Opera Company (COC), is Canada's first purpose-built opera house. The company had dreamed for decades of building its own venue, so when the opportunity arose, every measure was taken to outdo the old rented performance space. Canadian Opera Company general director Richard Bradshaw worked with Diamond and Schmitt Architects to create a welcoming opera house with exceptional acoustics.

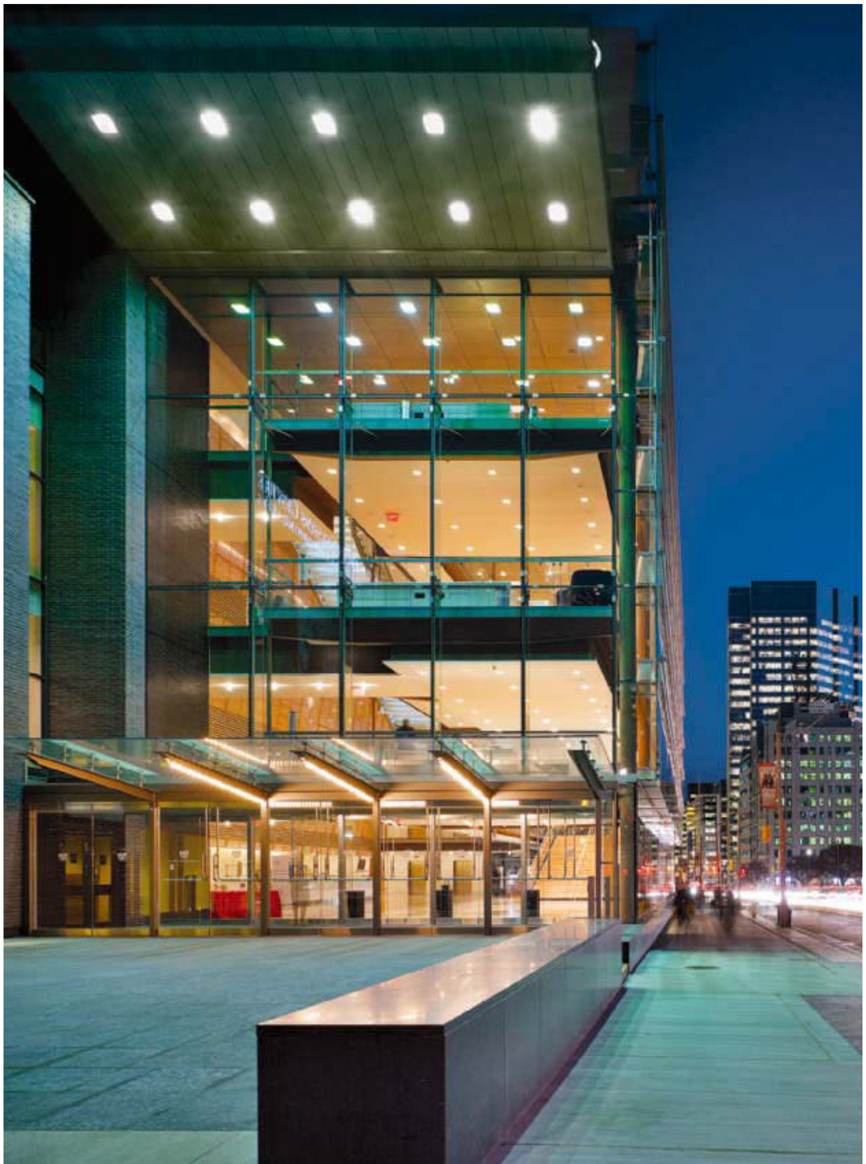
Occupying a full block in downtown Toronto, the Four Seasons Centre attempts to blur the boundary between the city and the opera house. The entrance is a four-story, transparent social space called the "City Room," which runs more than 50 yards along University Avenue. Utilizing structural glazing with low-iron glass, the entire facade hangs from the roof on ½-inch-diameter stainless-steel rods and is tied back to columns. Horizontal glass girders provide an inconspicuous way to transfer wind load to the structure. The effect is a crystalline openness that, in the words of COC marketing director Jeremy Elbourne, "helps to break down the intimidation factor of attending an evening at the opera." Elbourne also recognizes it as "a wonderful advertisement for that experience." Revealing the activity of the audience inside cultivates a new audience outside.

In its first year of operation, COC made sure that plenty of activity within its glass walls would be visible. From the outside, what appears to be a large stair between the third and fourth levels is in fact a 200-seat amphitheater, which hosted a series of 90 free concerts during last year's inaugural season. Running behind it, stretching from ground level to the fourth floor, is the world's longest-spanning structural glass staircase.

A slatted steamed-beech screen hangs as an intermediary between the transparency of the City Room and the solid walls of Canada's first structurally isolated performance hall. The five-tiered, European-style, horseshoe-shaped auditorium has been lauded by opera critics around the globe as an outstanding acoustical space. Diamond and Schmitt intended to mold the acoustical and theatrical requirements of the COC into an architectural aesthetic. They managed to create a space that is simultaneously elegant and straightforward. The theater's curving plaster shell, its layered ceiling,

Project: *Four Seasons Centre for the Performing Arts, Toronto, Canada*
Key players: *Diamond and Schmitt Architects*
Client: *Canadian Opera Company*





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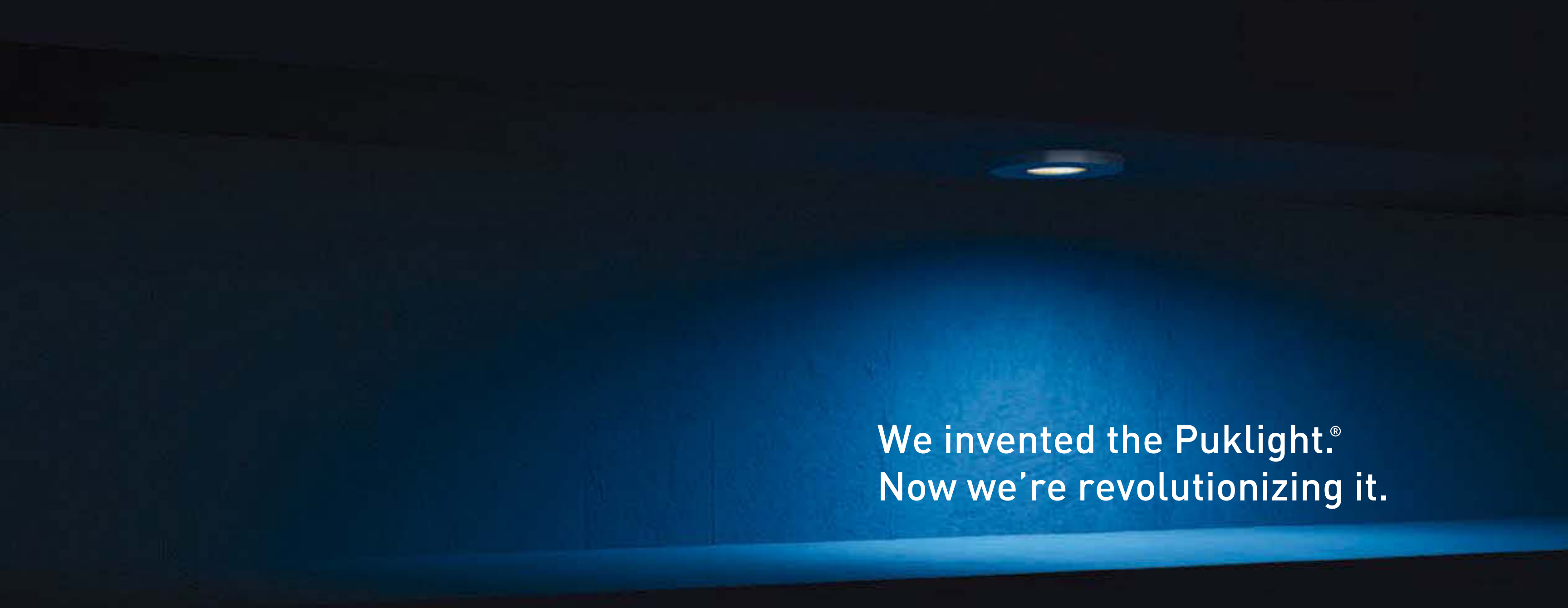

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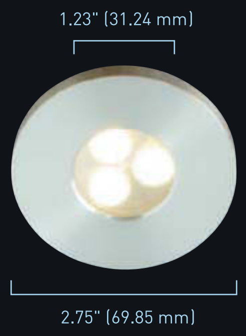

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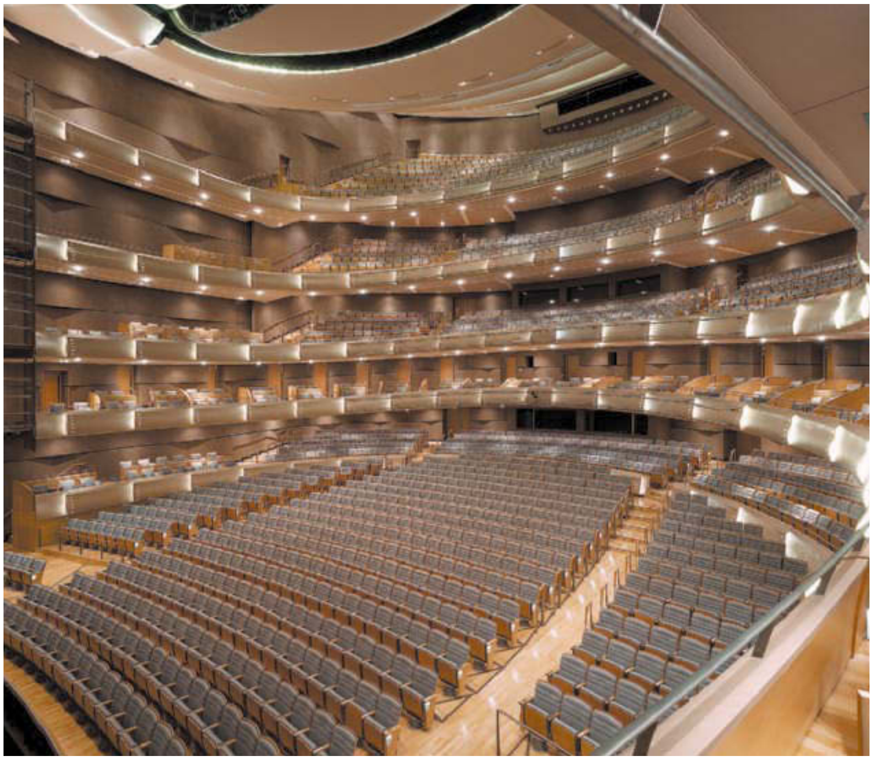
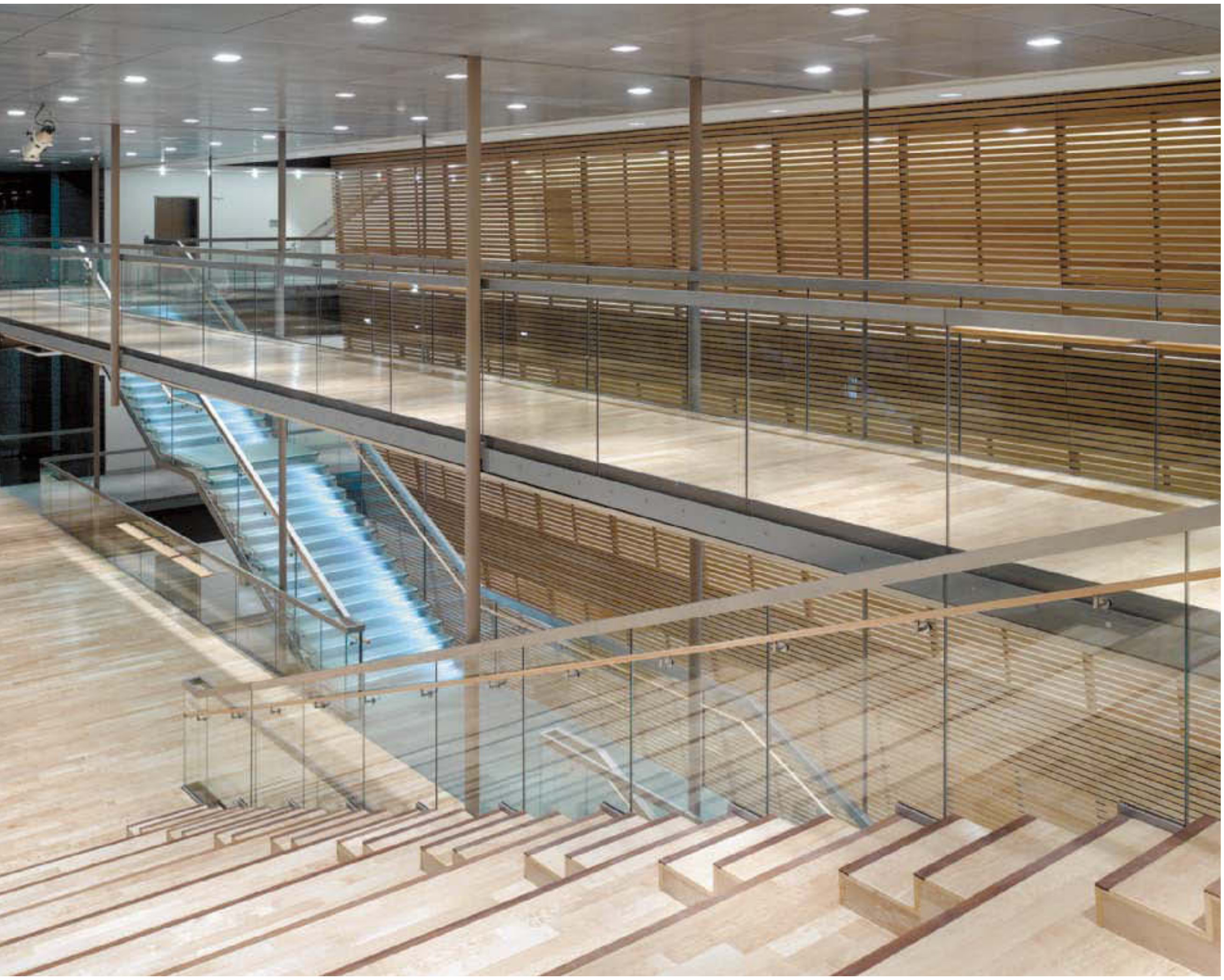
and frameless proscenium arch create an unpretentious but visually sophisticated setting for the live performances.

Constrained by limited backstage space in its previous venue, the opera company hoped to expand its offerings in number and in repertory. In the new Four Seasons Centre, full rear and side stages along with a 112-foot fly tower and ample wardrobe and storage allow the company to produce several operas playing in repertory. A flexible orchestra pit can accommodate intimate chamber pieces and massive, 100-musician orchestras like those required for Wagner's Ring, a monumental four-opera cycle that opened the hall's inaugural season. The improved facilities prevent the company from having to dismantle and store set pieces off-site, reducing changeover time and production expenses.

The COC's first season in the new opera house played to 99 percent of capacity. "From sight lines to acoustics to the openness and welcoming nature of the lobby spaces … the quality of the experience in the building has meant that we have been able to increase our average ticket price by 15 percent," notes Elbourne. Increased subscription sales signify that the new building not only entices people to come see an opera production, it provides an experience worth returning for.





A staircase-cum-amphitheater with the world's longest-spanning glass stair stretch across the four-story City Room (left). Behind a slatted-beech screen is Canada's first structurally isolated performance hall (left and above).

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SJ BERWIN
HOK International

SJ Berwin is a large, growing law firm with its headquarters in London and nine offices throughout Europe. After 25 years in business, the company outgrew its London offices. Providing legal services to entrepreneurial companies and financial institutions, the firm wanted to portray a sophistication to match that of its clients. The similarly large and international architectural firm HOK International understood SJ Berwin's vision and designed an office complex that resembles less the mahogany-lined, hierarchical model of a law office than it does the hip, luxurious aesthetic of a boutique hotel.

Located in the three-story Thames Exchange Building, which previously housed the HSBC dealing-room floors, SJ Berwin's new headquarters looks out on the river Thames and St. Paul's Cathedral. HOK's objective was to form an energizing space that would allow the large staff to work more closely with one another—a difficult task in a building that could enclose three or four professional soccer fields.

The solution was to create three atria, which bring daylight into centralized arteries surrounded by glass-fronted offices. The strategic use of glass throughout the building opens sight lines across each floor, facilitating collaboration and allowing SJ Berwin's clients a glimpse of the firm's inner workings.

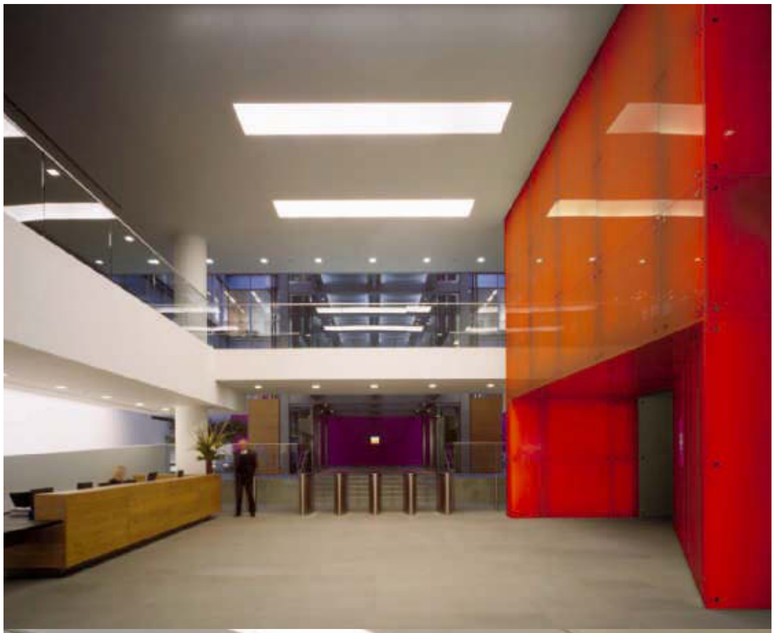
HOK also added a fourth floor to the building, with space for a ½-acre roof garden, among the largest in London. Two additional private gardens accompany meeting rooms where gatherings can move in and out of doors during the warmer months.

The democratic format of the building does not reserve desirable views of the river and cathedral for partners. Instead, the views remain in public break-out spaces and in the several dining facilities. Client areas include a confidential meeting suite for those who wish to be inconspicuous, and a "deal suite" with private meeting rooms and a relaxation and refreshment area for use during negotiations.

Light cubes and recessed lighting illuminate walls and floors with the entire spectrum of colors, supplementing the daylight that permeates most of the building. Clients enter the lobby through a double-height light cube that can change color with infinite variation.

The showy features of the building—its private gardens, deal-clinching suites, and flashy lights—place it somewhere between a law firm and a trendy club. Sleep pods for overworked lawyers add another luxurious touch to the company, named one of "Britain's Top Employers" this year by the Corporate Research Foundation. Jurors noted, "The space must be a fantastic recruiting tool." SJ Berwin admits to actively using the newly designed office in recruiting activities, suggesting that better design can attract better employees.

Project: *SJ Berwin, London, England*
Key players: *HOK International; Seth Stein Architects*
Client: *SJ Berwin*



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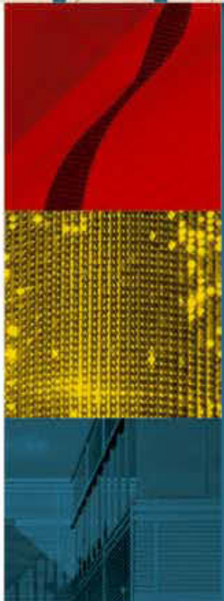

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SAN DIEGO PADRES BALLPARK

Antoine Predock

Home to the San Diego Padres since April 2004, Petco Park has as its mission to be more than a ballpark—to serve as a large-scale city planning project. For the first time in professional sports, a franchise was required to invest hundreds of millions in at-risk capital for the development of the neighborhood surrounding its publicly owned facility.

Near the Gaslamp Quarter of downtown San Diego, the Ballpark District occupies land that had been mostly vacant when the Padres project received approval in 1998. The city, which owns 70 percent of the park, stipulated the Padres and their private partners invest a minimum of $311 million in retail, residential, and commercial projects within 26 blocks of the stadium.

Looking to create an identity for the district, the Padres turned to Antoine Predock to design a bold structure and provide an anchor for continued development. Using the striking geometrical formations he is known for, Predock created a stadium with a strong presence. Two iconic towers incorporating special suites, viewing platforms, and field lighting make an impression on the San Diego skyline. Massive, stepped stone terraces reflect the color of the local soil and cliffs at Torrey Pines. Concessions and other programmatic content are pushed from under the grandstands to the perimeter, creating an unusual interstitial space, mediating interior and exterior, and bringing daylight and breezes into the concourse. The Outfield Park also helps draw the stadium out to the community by providing a public park extending one block to the north of the playing field, where fans can picnic under eucalyptus trees and watch the game.

In an area that saw little investment interest before 1998, property values have since increased 500 percent. Private developers have already invested $1.5 billion in the neighborhood. Predock's innovative, community-driven design has helped create an economic engine for the eastern half of downtown San Diego.

Project: *San Diego Padres Ballpark, San Diego*
Key players: *Antoine Predock Architect*
Client: *San Diego Padres; City of San Diego*

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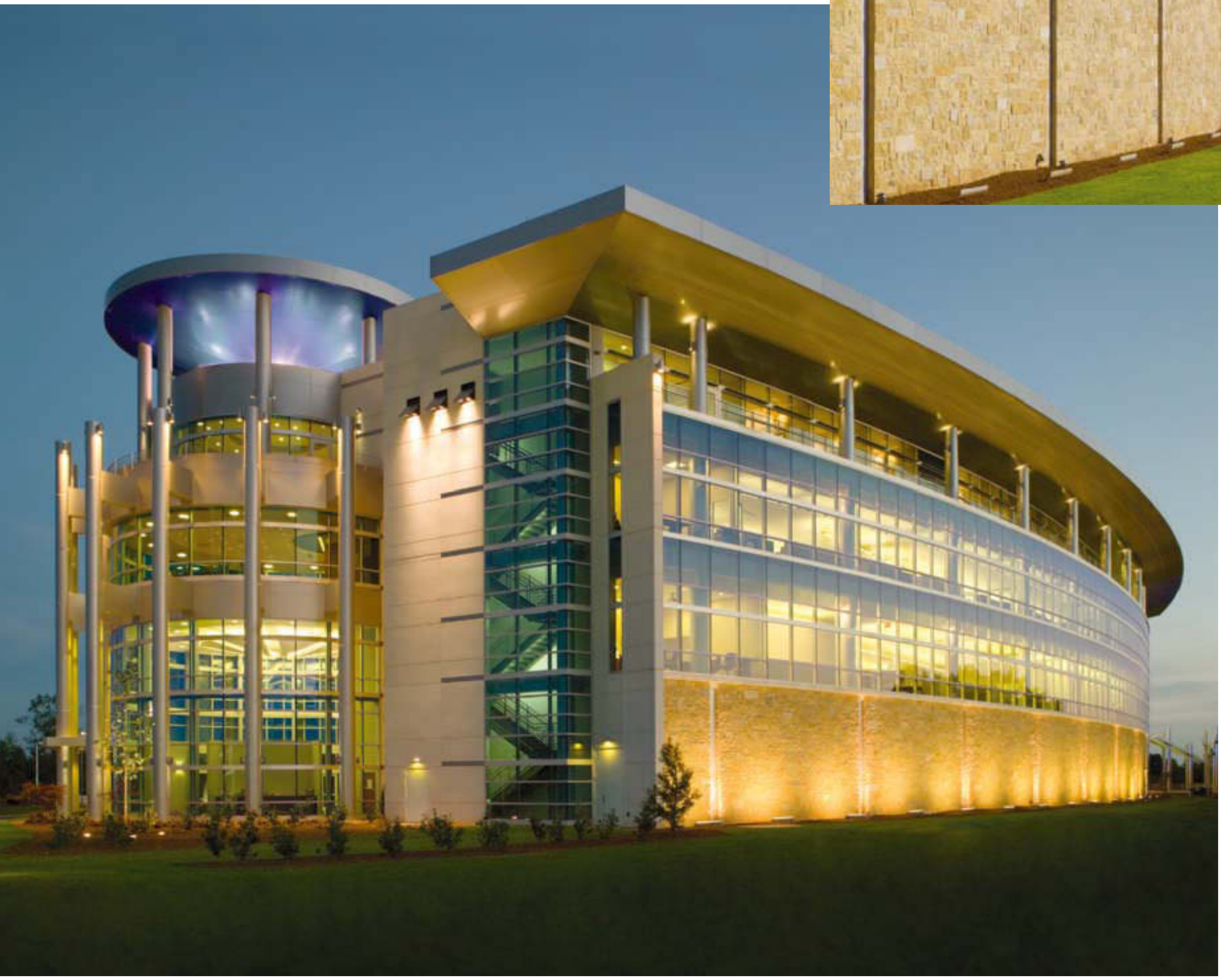
HUBBELL LIGHTING HEADQUARTERS
McMillan Smith & Partners Architects

Only one building in this year's collection is home to a design company. For lighting designer and manufacturer Hubbell, the first thought in planning a new corporate headquarters was lighting. The business became its building in a way that none of the other winning designs could. McMillan Smith & Partners Architects teamed with lighting design firm Visual Terrain and interior designer Storyline Studio to create a building that showcases the client's products by integrating them into the architectural design.

Located in Greenville, South Carolina, the four-story, 185,000-square-foot headquarters brings together Hubbell Lighting's 16 distinct brands into a single building with remarkable facilities. A 25,000-square-foot lighting-solutions center is the heart of the new building, containing training rooms, an amphitheater, dining facilities, and a research and development lab. The center provides an educational facility with demonstration areas devoted to the five challenges Hubbell has identified as the most important in its industry: harvesting daylight, maximizing energy efficiency, controlling light pollution,



Project: *Hubbell Lighting Headquarters, Greenville, South Carolina*
Key players: *McMillan Smith & Partners Architects; Visual Terrain; Storyline Studio*
Client: *Hubbell Lighting*

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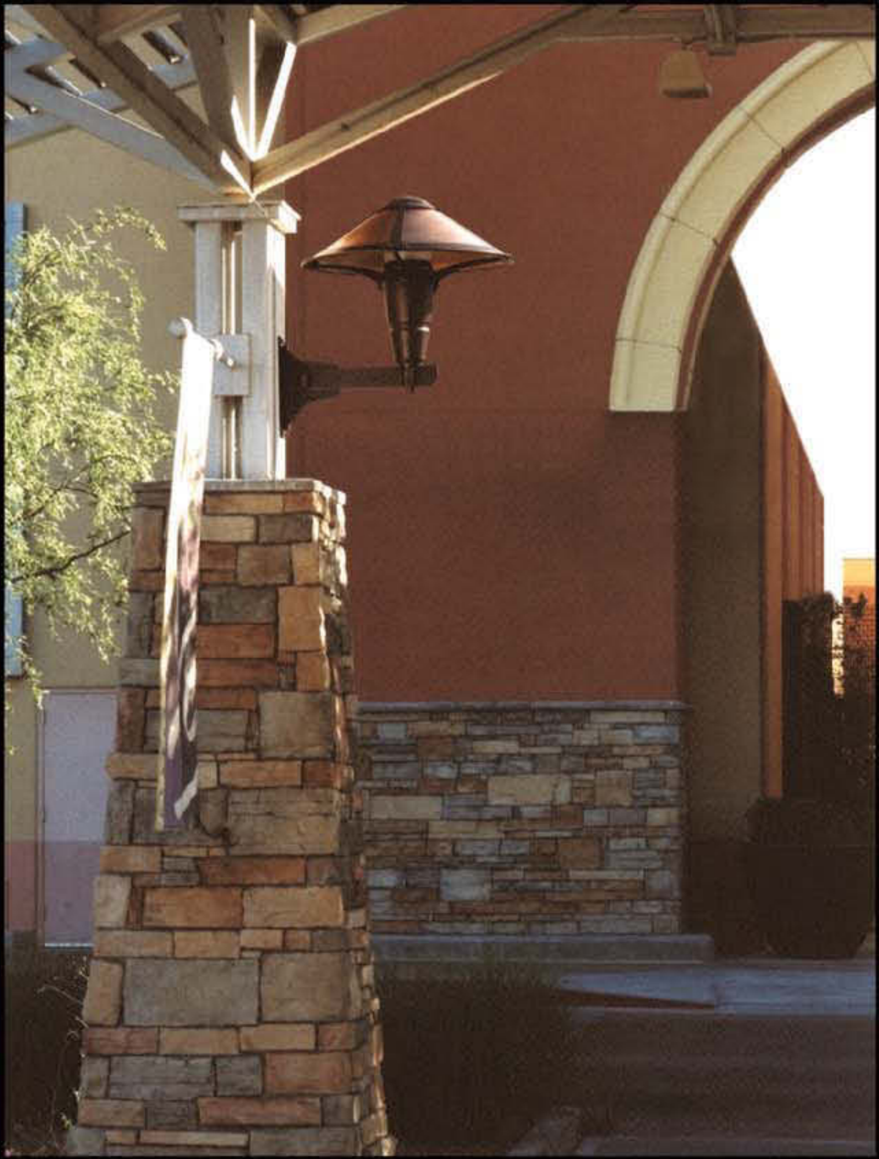

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specifying solid-state lighting products, and integrating life-safety systems. The daylight harvesting workshop, for example, traces a day from sunrise to sunset to illustrate how daylight energy is captured.

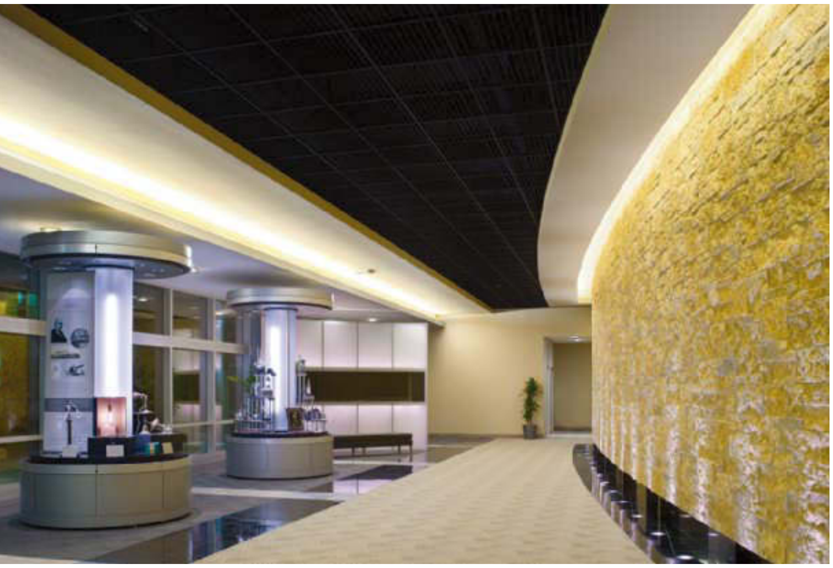
Internally illuminated movable walls, modular wiring, and interchangeable parts make the lighting solutions center a flexible space that can be reconfigured to adapt to the evolving construction industry. Backing the training rooms against the headquarters' major storage area facilitates the process of adapting the space. The on-site testing facilities in the 3,000-square-foot research and development lab bring even more efficiency to the facility, shortening the time it takes to develop products while enabling better quality control and encouraging spontaneous communication between creative and technical staff.

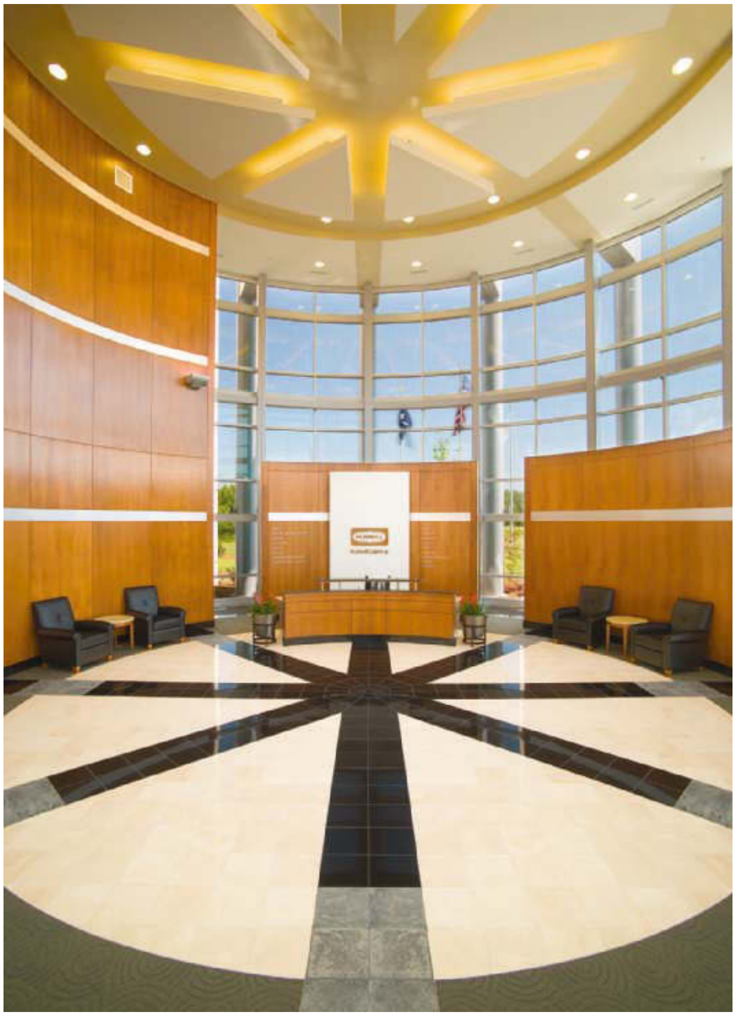
The building provides a showcase for Hubbell, incorporating lighting fixtures from each of the corporation's 16 brands throughout the interior and exterior. More than 150 types of fixtures are used, including custom-designed models such as "Starlight," which illuminates the top of the building's signature four-story entrance rotunda in a silvery-blue hue.

As a company that manufactures energy-consuming products, Hubbell wanted a building that represented its commitment to designing energy-efficient lighting. The LEED Silver–certified project reused furniture from the corporation's previous offices and diverted more than half of the construction debris from landfills.

The Hubbell Lighting headquarters demonstrates the benefit of smart facility planning and design. The building's slim, curved shape ensures that all occupants are in close proximity to support spaces and can enjoy well-managed daylight. The company was so pleased with the design that it distributed renderings to employees nationwide, encouraging people to move to South Carolina for the opportunity of working in the new facility. In Greenville, strangers have approached employees wearing Hubbell ID badges, inquiring how to get a job in the building. The corporation will benefit financially from energy savings, but it is the design of the extensive, state-of-the art lighting-solutions center that now gives Hubbell an advantage in its industry.

The new corporate headquarters in South Carolina incorporate more than 150 different lighting fixtures from all of Hubbell Lighting's 16 brands. The company also designed custom fixtures for the project.





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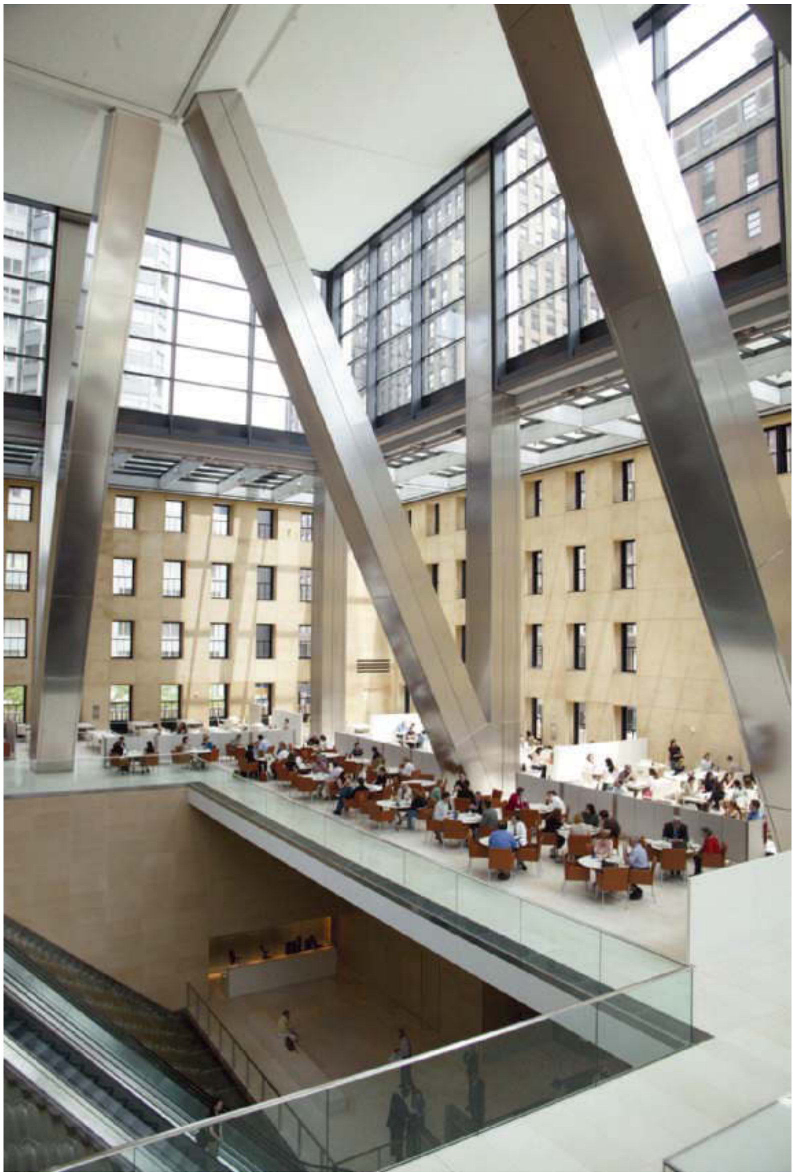
HEARST TOWER
Foster + Partners and Gensler

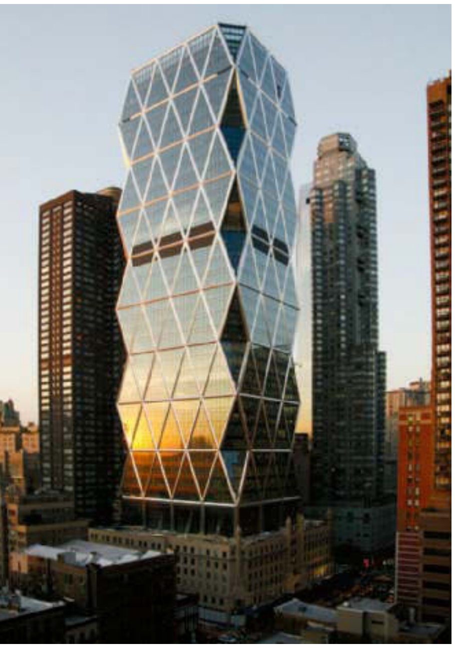
Foster + Partners' design for a stainless-steel-clad, diagrid structure has given the Hearst Corporation an iconic presence on the New York City skyline [RECORD, August 2006, page 75]. The Hearst Tower's environmental agenda and unique aesthetic have dominated conversation about the building, but its occupants like to talk about how it enhances their work experience.

The new 46-story structure rises from a six-story pedestal built in 1928 and designed by Joseph Urban as the base for a future tower. But the Great Depression stalled the plans, and the short building served as the Hearst headquarters until Foster used it as the springboard for his design. Moving from 12 offices around the city back to its original home has given the company a more cohesive identity, and fewer private offices encourages more interaction among employees. The overall office-to-workstation ratio has been reduced from 50:50 to 20:80. Shorter workstation walls and casual meeting areas in desirable corner areas also encourage collaboration. Synergy among the leaders of Hearst's many publications is greater now due to the seamless flow of space in the building.

As interior architect, Gensler designed many of the tower's amenities. A fitness center, media lab, data center, and digital photo and broadcast studios make Hearst's media operations run efficiently. Gensler also helped Hearst develop a "tower transition process" to aid employees in moving smoothly to the new workplace.

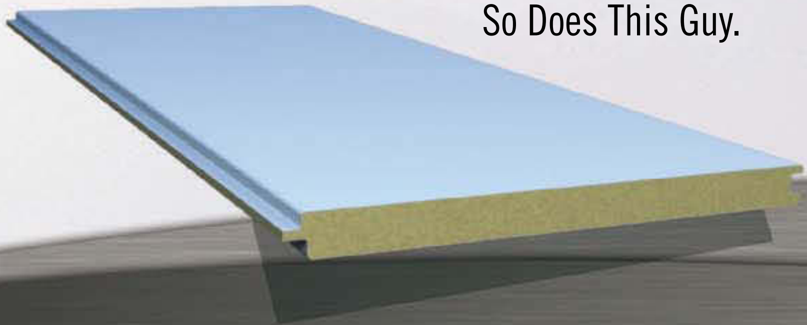
Increased productivity, an improved corporate image, and a healthy, attractive work environment have made Hearst a more desirable employer and a better company overall. *Cosmopolitan* publisher Donna Kalajian Lagani says the building has changed her perception of the company. "There is much more camaraderie companywide," she observes. "I used to say I work at *Cosmopolitan*. Now I say I work at Hearst first."





Project: *Hearst Tower, New York City*
Key players: *Foster + Partners, design architect; Gensler, interior architect; Adamson Associates Architects, architect of record, core and shell*
Client: *Hearst Corporation*

PHOTOGRAPHY: © NIGEL YOUNG



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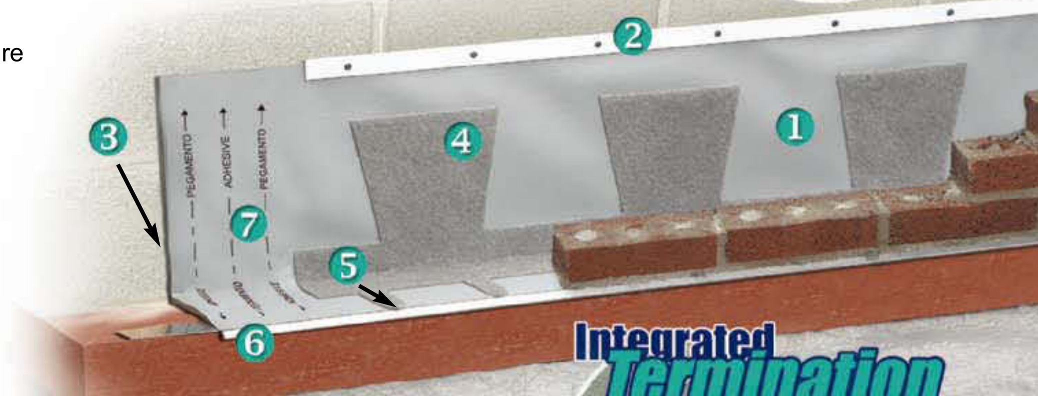
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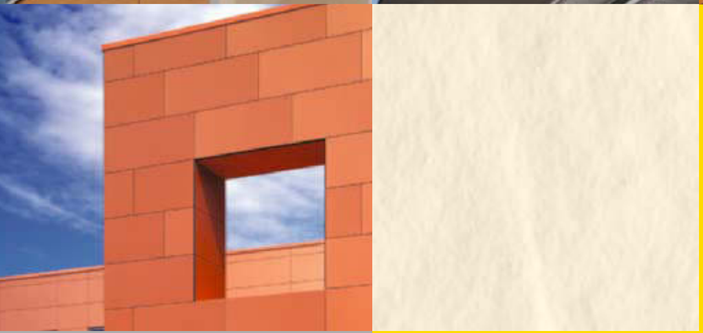

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Reinventing Tokyo?

New mega-developments and arts venues are adding amenities to the public realm, but they may have unintended consequences

By Clifford A. Pearson

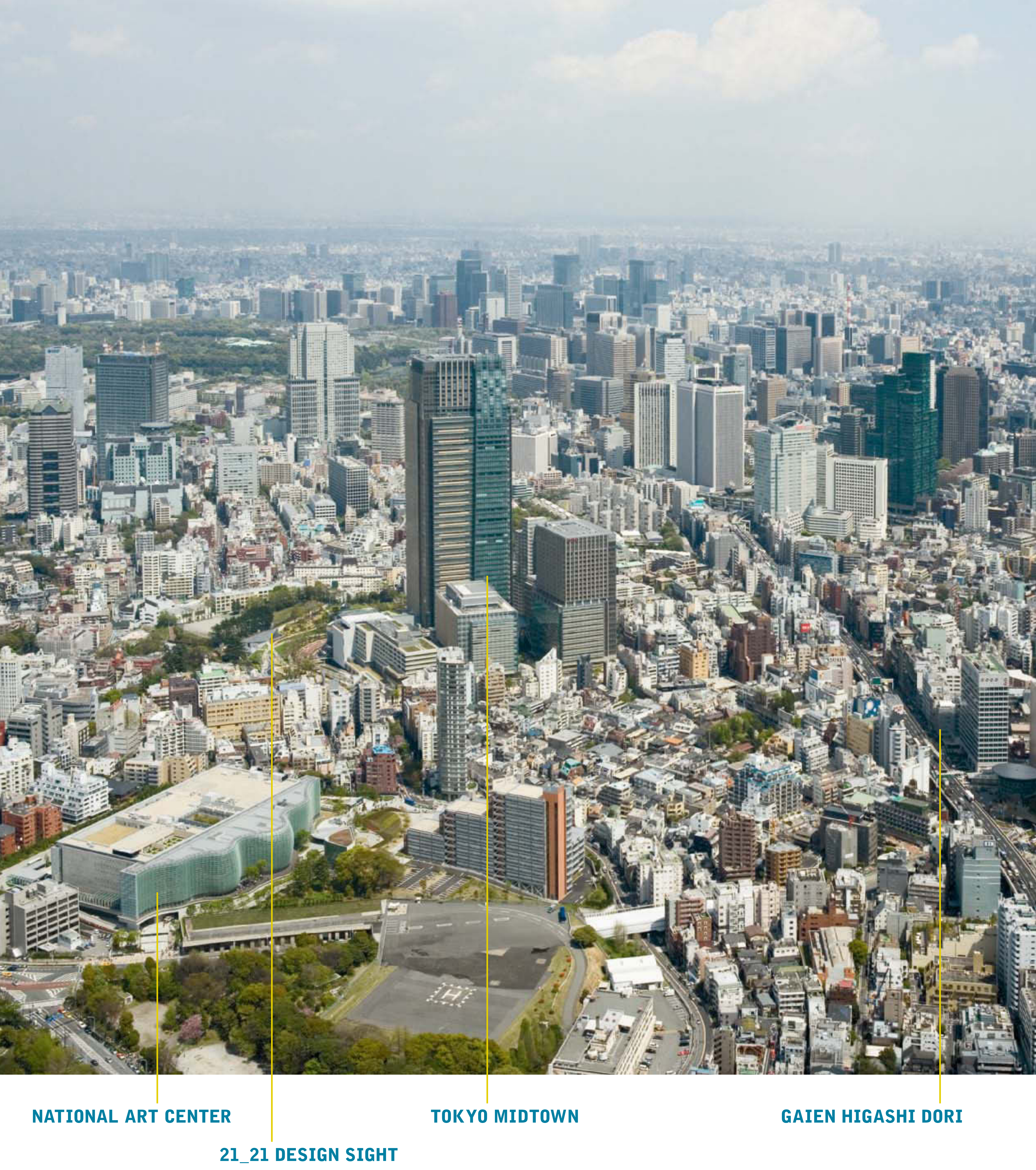
Many foreign visitors—and even some Japanese—find Tokyo a maddening place. Most streets have no name, and buildings within a block are often numbered chronologically in the order they (or their predecessors) were erected. Elevated highways slice through the city, casting major avenues in shadow and blocking views. Lacking a street grid or any easily recognized pattern of urban development, Tokyo poses major navigational obstacles to anyone not intimate with its geographic quirks. For a metropolitan area of 27 million people, it offers few parks, public spaces, or congregations of cultural venues. And because it has no zoning, it allows wildly different uses to reside next to each other. "The bank and the pinball parlor, the beauty shop and the flophouse are juxtaposed," notes Donald Ritchie in his book *Tokyo: A View of the City.*

In 2003, Minoru Mori, one of Tokyo's biggest developers, opened Roppongi Hills, a $2.25 billion mega-complex with a 54-story office tower designed by Kohn Pedersen Fox, an art museum designed by Gluckman Mayner Architects [RECORD, January 2004, page 106], a retail center by the Jerde Partnership, a television network headquarters by Fumihiko Maki [RECORD, February 2004, page 88], apartment towers, and a cineplex. Occupying 29 acres in the center of a densely packed district, the development operates on a scale foreign to a city where 20-seat restaurants and tiny bars often stack one on top of another in 8- and 9-story buildings. But Roppongi Hills also offers a lovely Japanese garden and landscaped plazas open to the public.

Four years later, a similarly scaled, mixed-use development called Tokyo Midtown opened just a 10-minute walk from Roppongi Hills. As seen in the pages that follow, it too offers beautifully landscaped outdoor spaces and cultural facilities—a design museum by Tadao Ando and an art museum by Kengo Kuma. At nearly the same time, Kisho Kurokawa's National Art Center opened in the neighborhood, as well.

All of a sudden, Tokyo boasts a new museum district, one with chic restaurants, upscale boutiques, high-rise apartment buildings, high-design office towers, and street-level amenities such as parks and gardens. You have to wonder, though, how this new model and scale of development—adopted from another part of the world—will change the character of this strange and quirky city. While many people have long faulted Tokyo for its lack of public space and its disorienting physical layout, others have noted that its *Blade Runner*–esque juxtapositions and idiosyncratic pattern of development give the city its identity. As the old fabric of mismatched mid-rise buildings squeezed too close together gives way to master-planned mega-developments, will something unique be lost?

PHOTOGRAPHY: © SHINKENCHIKU-SHA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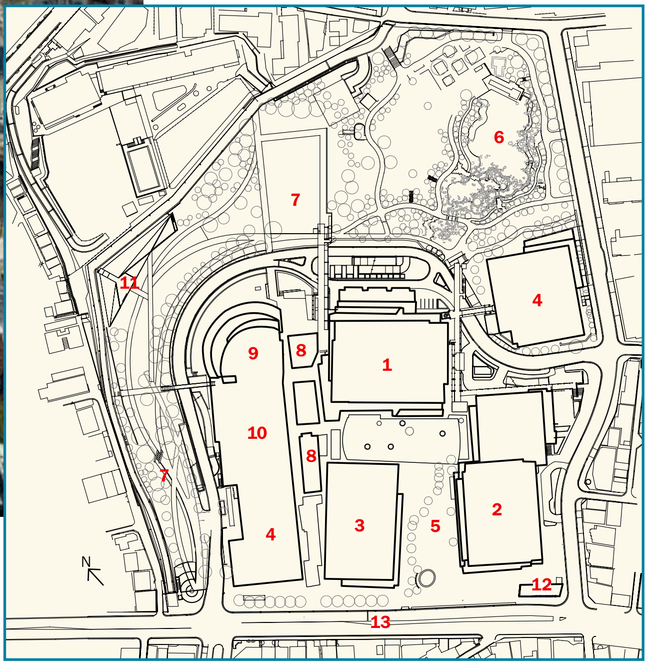
TOKYO MIDTOWN

A mega-project adds cultural venues, offices, shops, and open space to the Roppongi district, but also changes the scale of development

ROPPONGI HILLS



1. *Office/hotel tower*
2. *Office/residential tower*
3. *Office/retail tower*
4. *Residential tower*
5. *Main plaza*
6. *Hinokicho Park*
7. *Midtown Park*
8. *Retail galleria*
9. *Retail*
10. *Suntory Museum*
11. *21_21 DESIGN SIGHT*
12. *Subway access*
13. *Gaien Higashi Dori*

A group of Western and Japanese designers try to create a Rockefeller Center for 21st-century Tokyo

By Naomi R. Pollock, AIA

For years, the Japanese have been infatuated with Manhattan real estate. Timeless and elegant, New York landmarks fronting gracious avenues are everything that the vast majority of Tokyo buildings are not. But Tokyo Midtown, the latest in a series of mega-developments to emerge on the city's skyline in the past five years, greets the street with Fifth Avenue flair. The 5-million-square-foot, mixed-use project is the product of a consortium of investors spearheaded by real estate giant Mitsui Fudosan who, fittingly, hired a veteran New York firm Skidmore, Owings & Merrill (SOM) to take the lead on design. Big and brawny, Tokyo Midtown, like Roppongi Hills just a few blocks away, was conceived and built in one fell swoop.

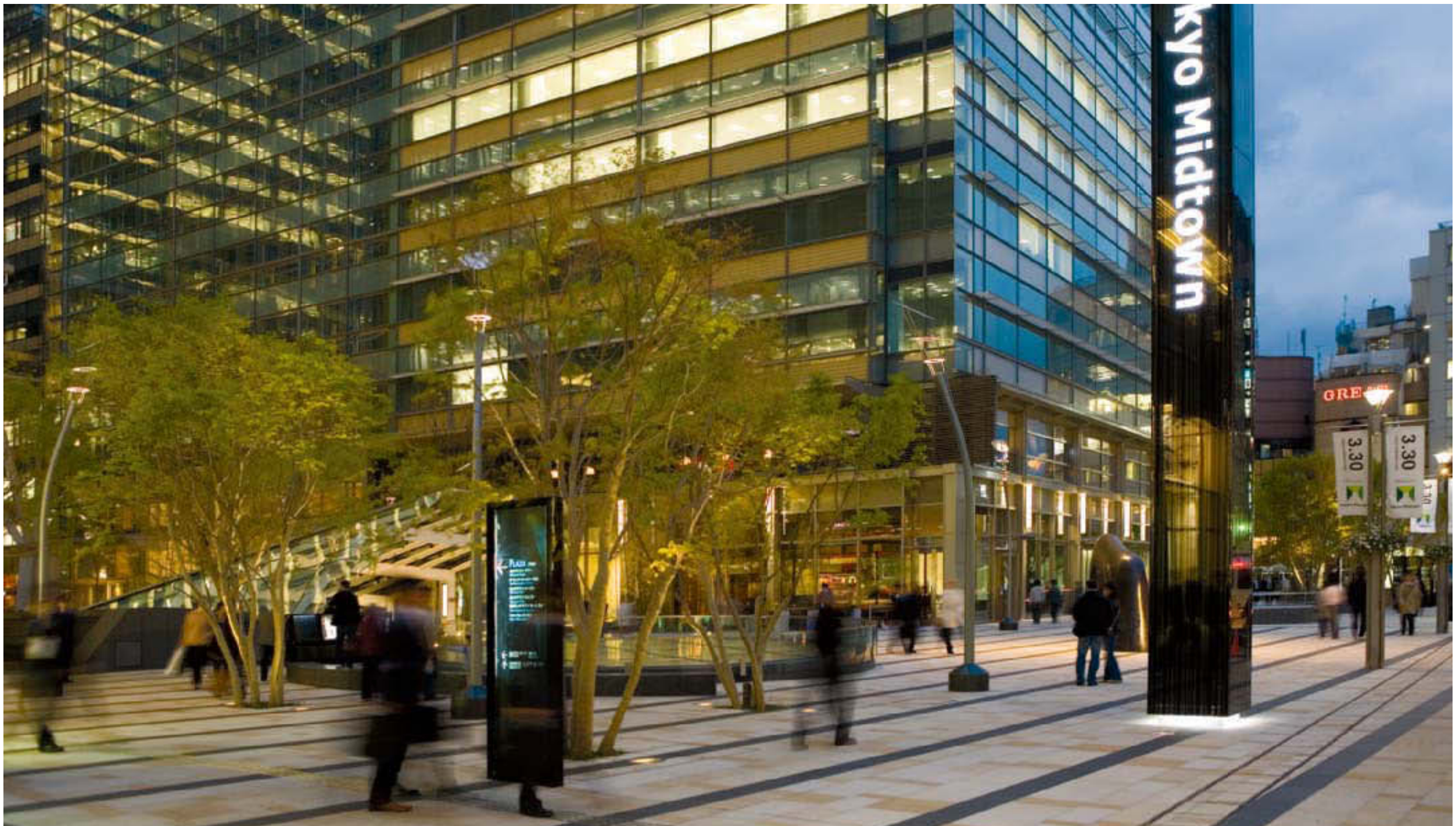
A cluster of six buildings created by different architects, Tokyo Midtown consists of office, residential, retail, restaurant, and cultural components intended to infuse the site with activity 24/7. While SOM produced Midtown's three main office buildings, Sakakura Associates, in consultation with Jun Aoki, worked on its apartment complex. The Suntory Museum of Art and 21_21 DESIGN SIGHT (a small exhibition venue) came from architects Kengo Kuma and Tadao Ando, respectively. Two grand, wedge-shaped public spaces unite the primary buildings. Outdoors, a main plaza draws pedestrians in from Gaien Higashi Street in front, while inside, a 4-story shopping galleria looks out at the expansive greenbelt wrapping the site's back (north) side. Although 40 percent of Tokyo Midtown's land is public space, the project's most prominent feature is its 54-story office tower crowned by a five-star hotel. At 814 feet high, the building has nudged out Kenzo Tange's City Hall as the tallest in town.

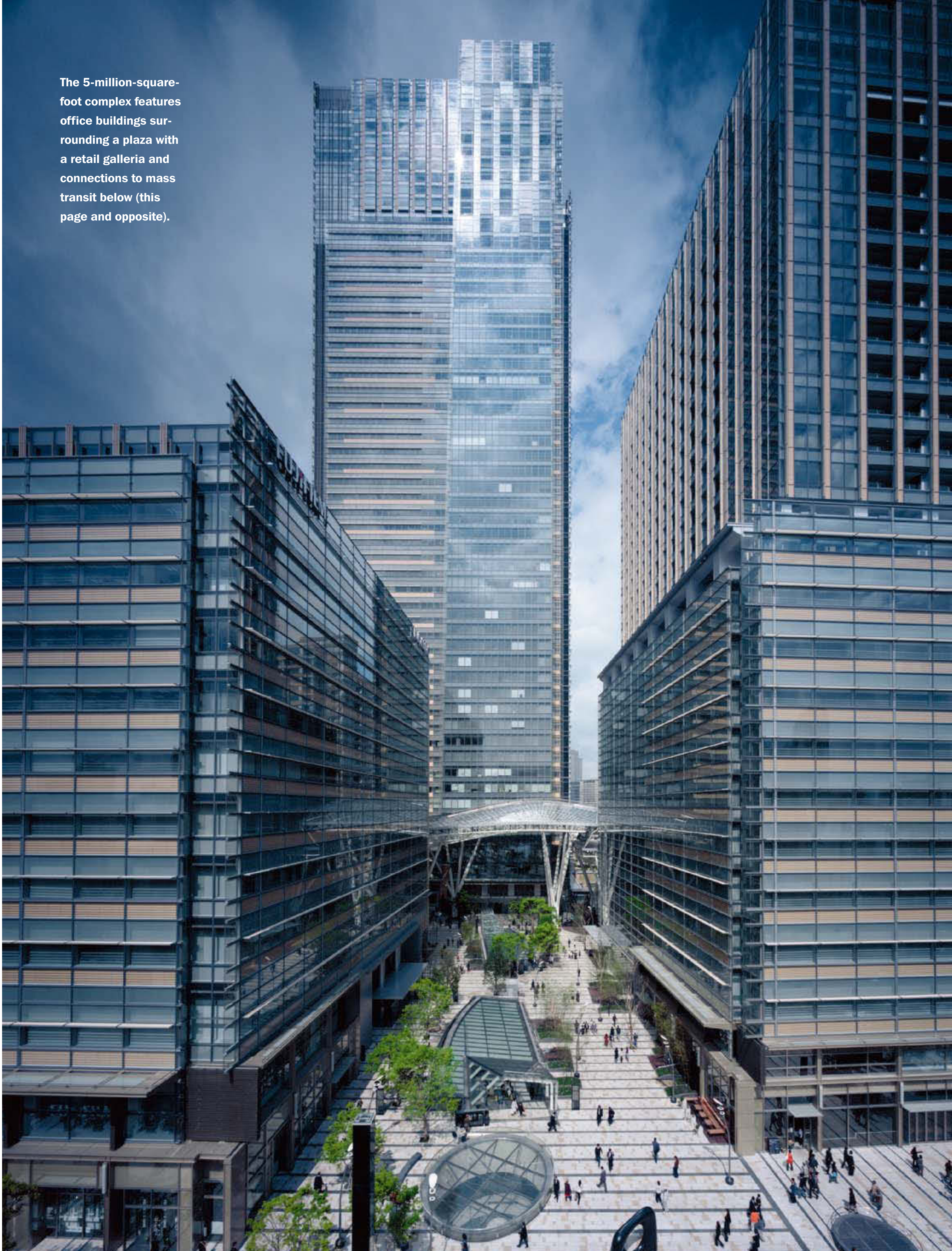
The project began in 2001 when the Japanese government decided to sell a 17-acre property that was once a feudal estate but most recently housed Japan's Defense Agency headquarters. At the time, the government was promoting the redevelopment of designated areas in Tokyo, such as this one in the Roppongi district, to boost the country's sluggish economy, says Yukio Yoshida, executive manager of the customer and public relations group of Tokyo Midtown Management. The sale of the site (at auction) was among Tokyo's most expensive real estate transactions ever. Yet properties of this magnitude in the center of the city very rarely come on the market.

Mitsui Fudosan began by developing a master plan and a set of ground rules with local architects Nikken Sekkei. Economic

Naomi R. Pollock, AIA, is RECORD*'s special international correspondent based in Tokyo and the author of* Modern Japanese House.

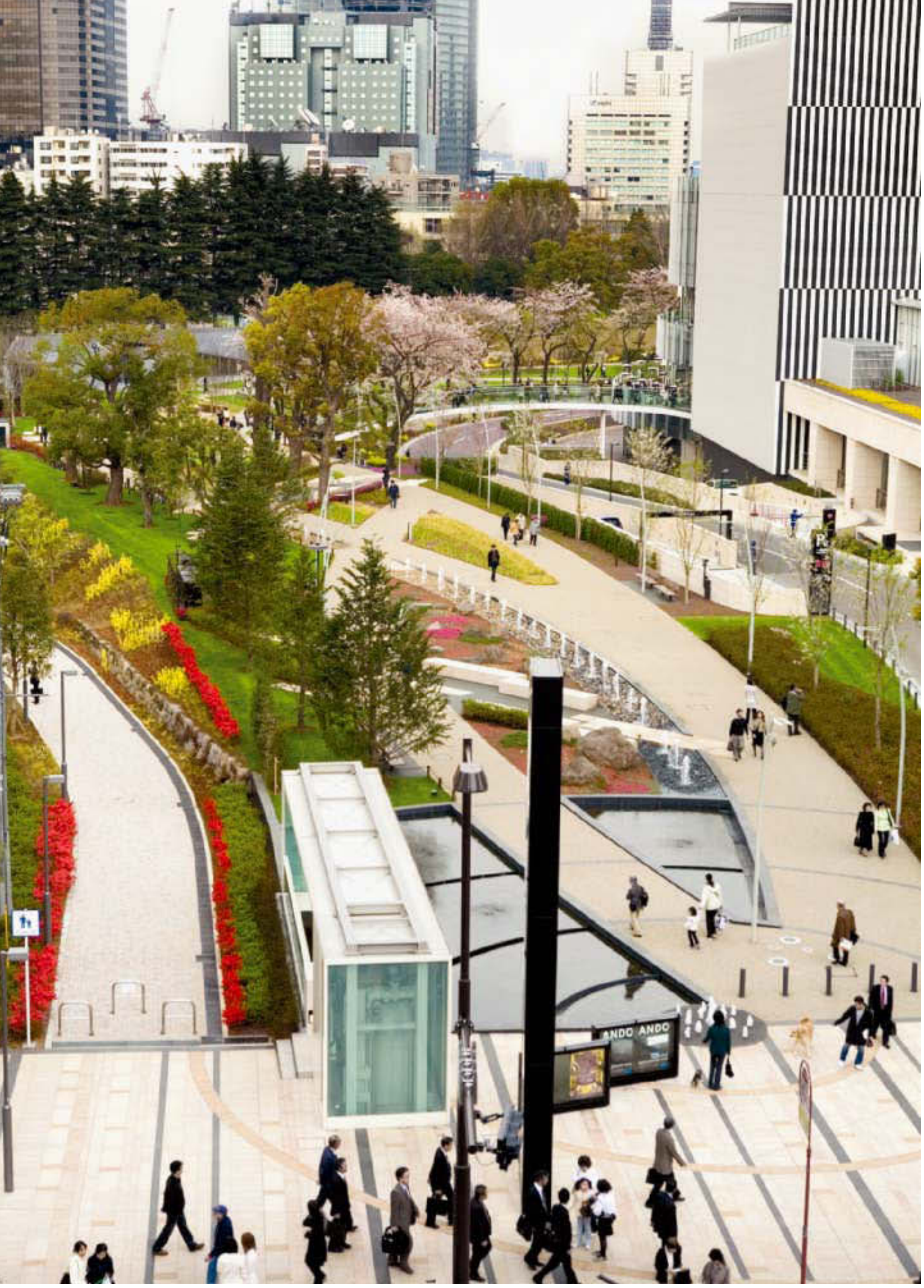
Project: *Tokyo Midtown, Tokyo*
Design team: *SOM/NY; EDAW; Communication Arts; Fisher Marantz Stone; Buro Happold; Nikken Sekkei; Sakakura Associates; Jun Aoki*





The 5-million-square-foot complex features office buildings surrounding a plaza with a retail galleria and connections to mass transit below (this page and opposite).

PHOTOGRAPHY: © SHINKENCHIKU-SHA, EXCEPT AS NOTED; EDAW/DAVID LLOYD (OPPOSITE)



EDAW designed the landscape as a series of expressive spaces that complement but don't simply echo the architecture (left). The hardscaped plaza and heavily trafficked areas (above and below) give way to a greenbelt on the north end of the site where smaller-scale buildings abut the property.

demands fixed the office tower's average floor plate at 46,500 square feet, and municipal regulations limited the building's height and the number of hours it could cast a shadow on its neighbors each day—factors that all but dictated the tower's midsite location.

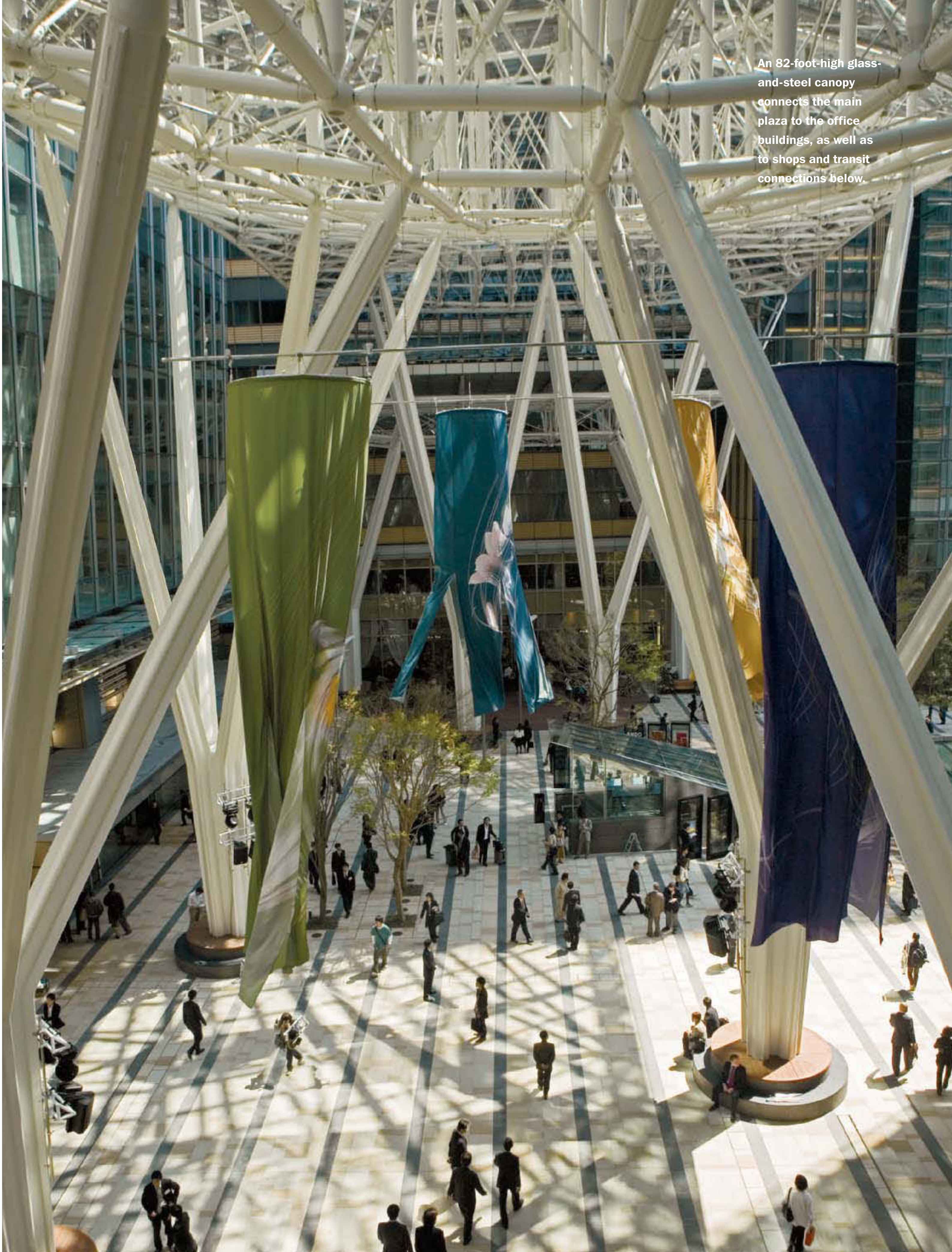
The task of converting these requirements into a comprehensive site strategy was given to SOM, which turned to traditional temple gardens for inspiration. "Our goal was not only to shape objects but to create spaces and places for people to enjoy themselves," explains Mustafa K. Abadan, SOM's design partner for the project. Unlike the grids that tie together many developments in the West, Midtown's buildings relate to each other as a carefully composed group of rocks with a dominant boulder in the middle and a blanket of moss all around. Unified by the main plaza, with its soaring, 82-foot high glass canopy supported by tree-shaped, steel columns, SOM's angled Midtown East and West buildings point the way toward the tower's entrance. "It is not unlike the General Electric Building at Rockefeller Center," says Abadan.

For the landscape design, the New Yorkers turned to San Francisco–based EDAW. In addition to working closely with SOM on the exterior spaces abutting the buildings, EDAW designed a greenbelt that buffers the complex from the small-scale commercial and residential properties north of the site. "The client wanted a strong, expressive landscape that was not derivative of the architecture," explains EDAW president Joseph Brown.

When it was the home of the Defense Agency, the site was closed to the public. Today, it serves as an urban oasis that invites pedestrians from all directions. A generous swath of grass laced with a cascading stream and pathways punctuated with exuberant plantings, it incorporates both new and old elements, including a remnant of the feudal estate's garden and 140 mature trees salvaged prior to construction.

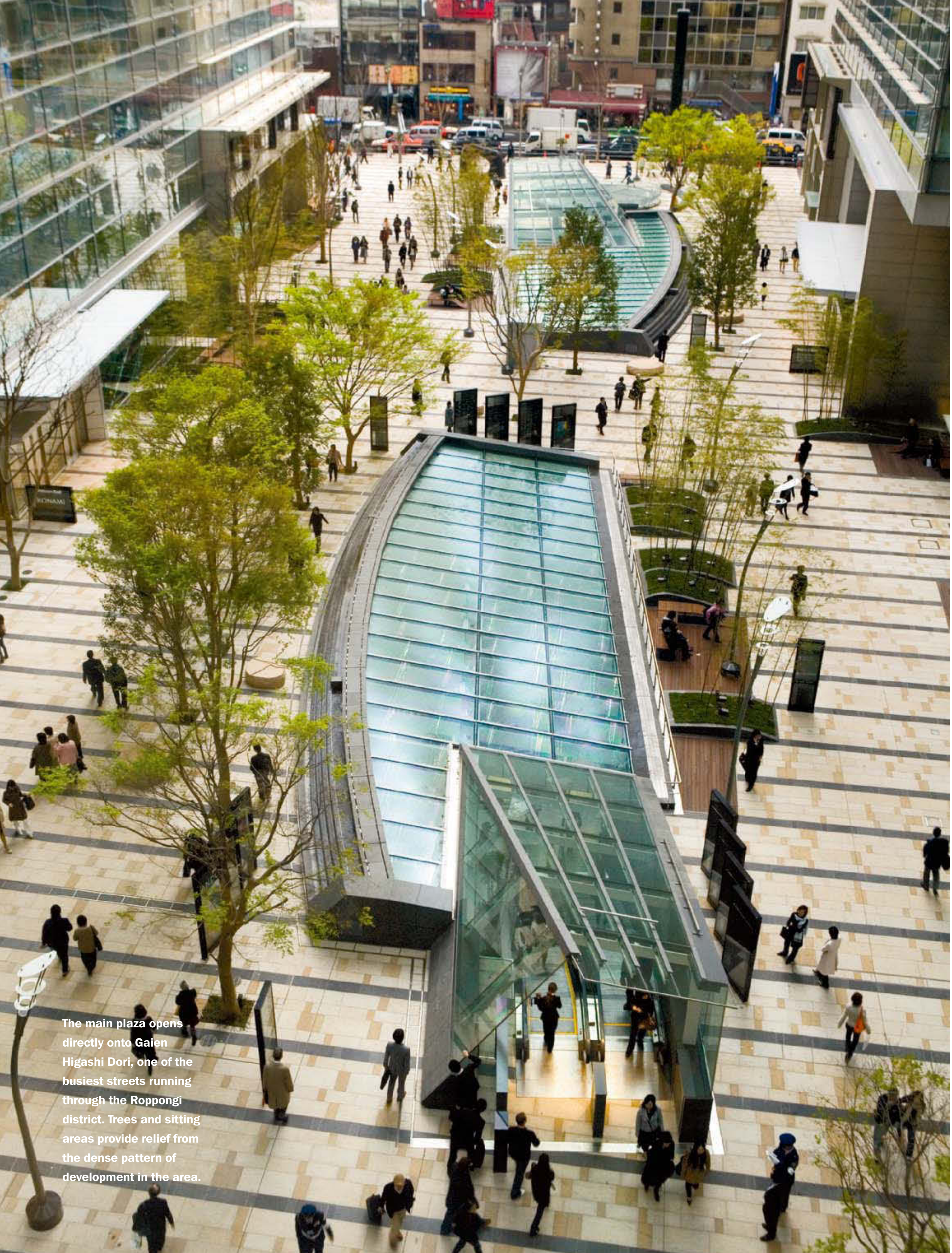
Like the park, the complex's irregular, pedestrian-friendly street wall on Gaien Higashi Dori and broad, tree-studded promenade out front engage the city. Yet there is no getting around the main tower's massive size. SOM used layered glass walls with terra-cotta louvers to articulate the building's surfaces and reduce the solar heat gain on each facade. Reminiscent of the screens and grilles used in old Japanese buildings, the multiple patterned layers help dematerialize the walls. And by dividing the surfaces vertically, as well as horizontally, the louvers help camouflage the tower's ample girth.

Despite SOM's heroic efforts,



An 82-foot-high glass-and-steel canopy connects the main plaza to the office buildings, as well as to shops and transit connections below.

PHOTOGRAPHY: © EDAW/DAVID LLOYD (THIS SPREAD)



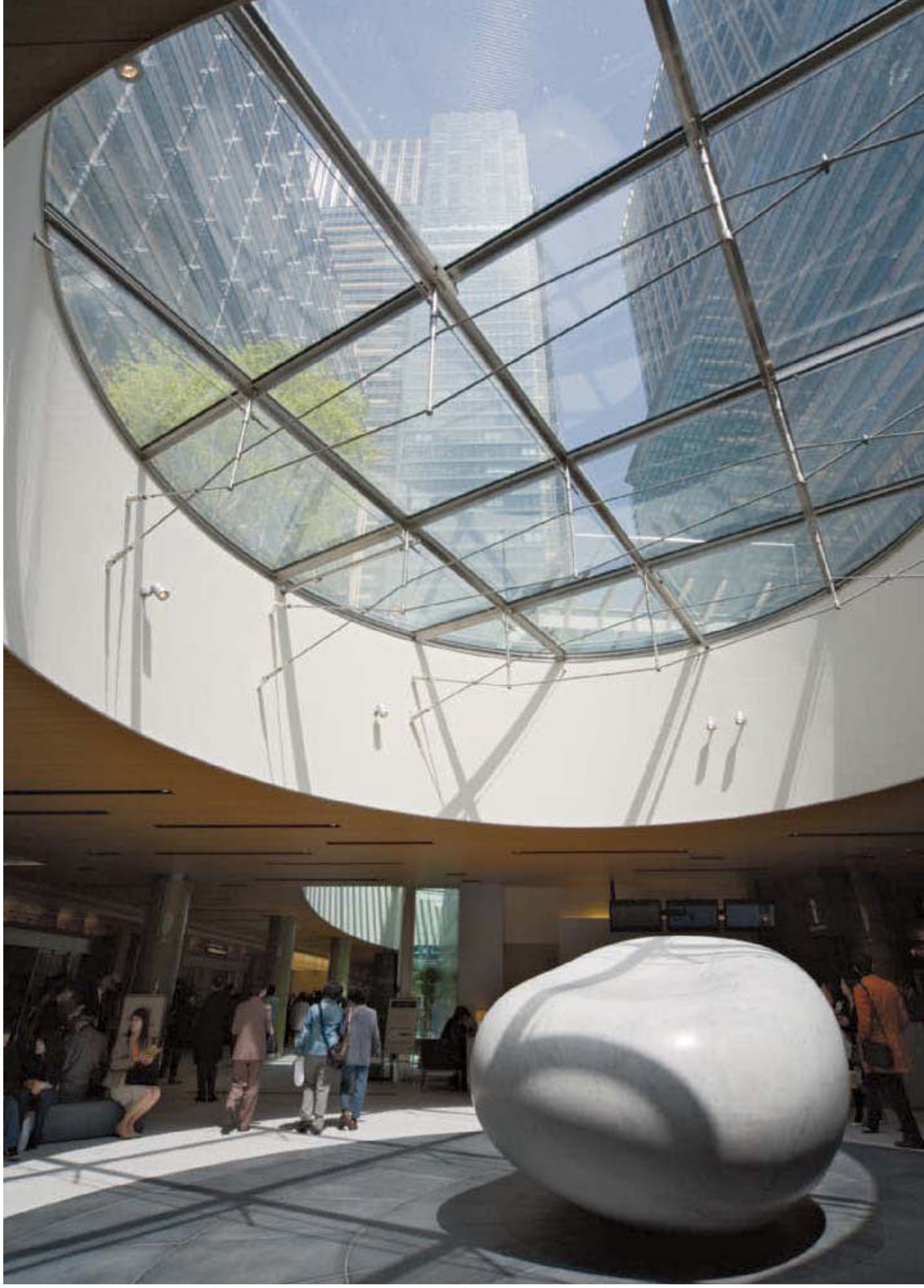
The main plaza opens directly onto Gaien Higashi Dori, one of the busiest streets running through the Roppongi district. Trees and sitting areas provide relief from the dense pattern of development in the area.

PHOTOGRAPHY: © EDAW/DAVID LLOYD (THIS PAGE)

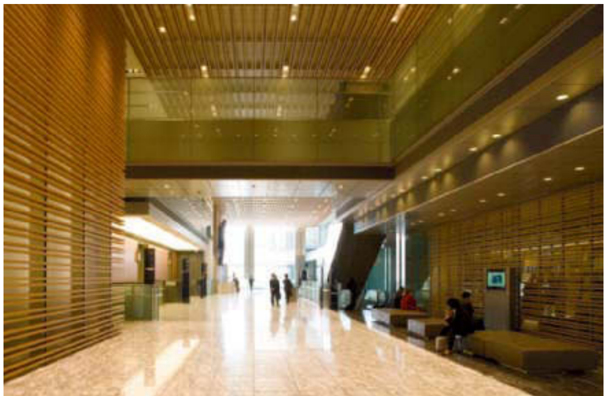
Midtown dwarfs the tiny streets and low-scale buildings nearby. But people in Japan are used to this sort of disjuncture. In Tokyo, planned street grids, park systems, waterfront promenades, and other urban gestures that bind Western cities are conspicuously absent. Instead, it's a city of individual landmarks and station hubs linked by a network of subway and train lines. Concerns about overcrowding in the city center in the 1960s and '70s led the municipal government to encourage the dispersal of business functions to different subcenters and residents to the suburbs.

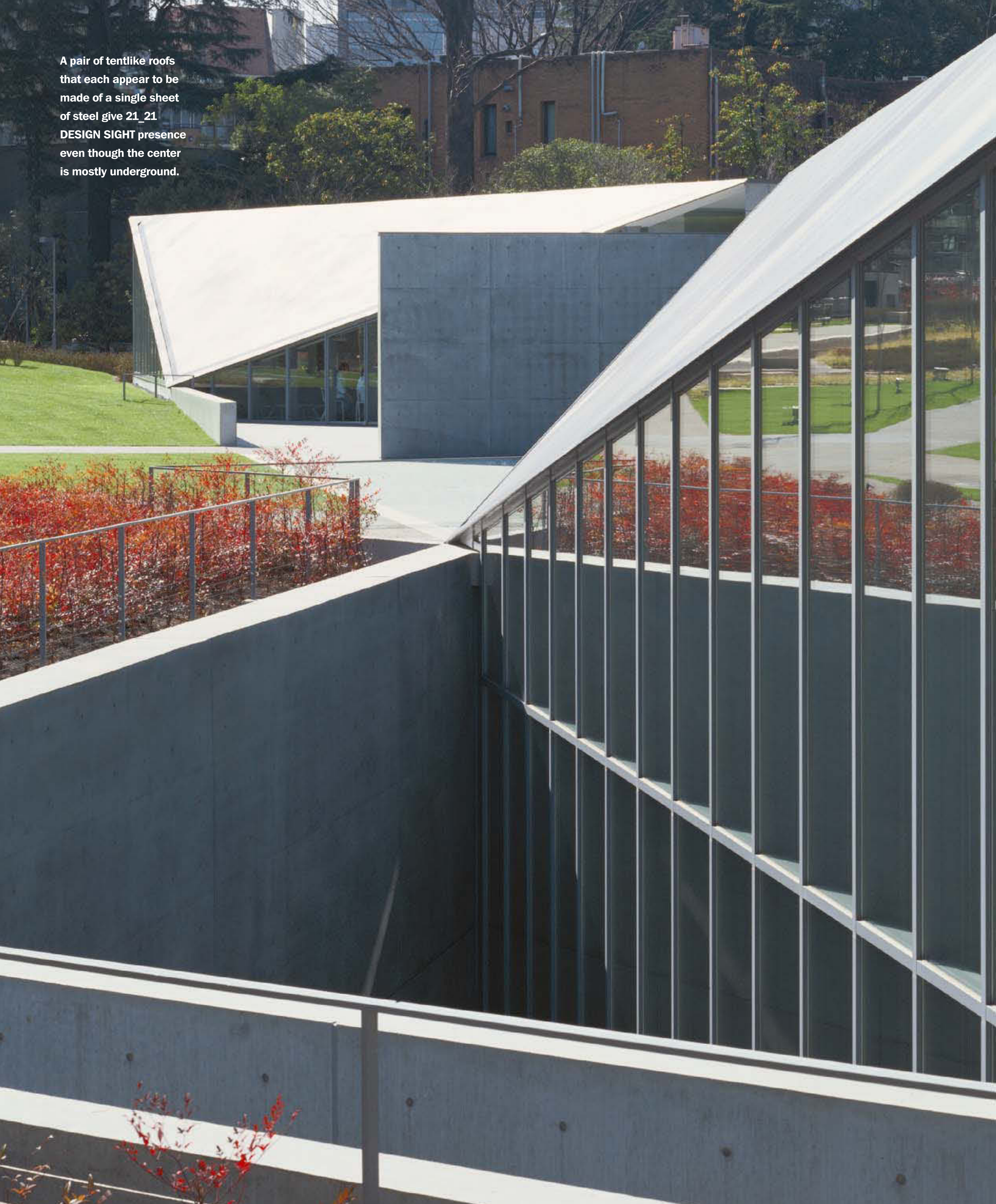
But in recent years, the thinking among planners has come full circle. Having recognized that a "multicenter urban structure" is neither compatible with the country's anticipated population decline nor good for the promotion of business activities, City Hall introduced its Tokyo Plan 2000 to reverse this trend. By creating what its planners call "urban space of high quality," the government hopes to revive the city's core and bring people back into town to live as well as work. Encouraged by tax breaks and other incentives, developers began several years ago undertaking large-scale projects in the center of the city. Some, like Mitsui Fudosan at Tokyo Midtown, acquired large, existing parcels. Others, such as Mori Building at Roppongi Hills, assembled land piecemeal. A third way is being pursued by Mitsubishi Estate, which is working its way through Marunouchi, the city's long-time financial district, replacing outdated structures building by building, each one a mixture of offices, restaurants, and retail.

Since the Marunouchi strategy works with the fabric of the city, it may be a more sensitive model. But projects like Midtown and Roppongi Hills, both conceived and constructed as complete entities, have merits, too. In a city where sidewalks, let alone pleasant places to sit and relax, are hard to find, open, green spaces are precious assets that benefit everyone. So are the new museums that developers are building as part of these complexes. Indeed, the impact of Midtown's two cultural facilities is enhanced because they are within walking distance of Roppongi Hills' Mori Art Center and Kisho Kurokawa's new National Art Center. These cultural and civic amenities coupled with class "A" offices and luxury retail draw crowds and put Tokyo on par with leading cities around the globe. But therein lies the rub. Reminiscent of developments elsewhere, large, orchestrated complexes with consistent design strategies may compromise the organized chaos and small-scale charm that belong distinctly to Tokyo. ■



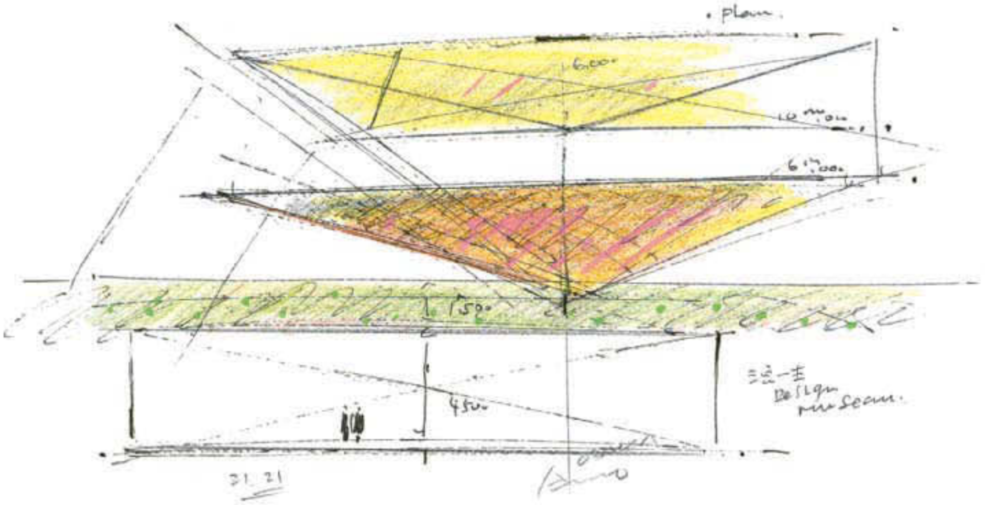
Large skylights in the plaza bring daylight to a four-level retail galleria below grade (above and right). Other parts of the project's interior world include large office lobbies (below) and links to the city's subway system.



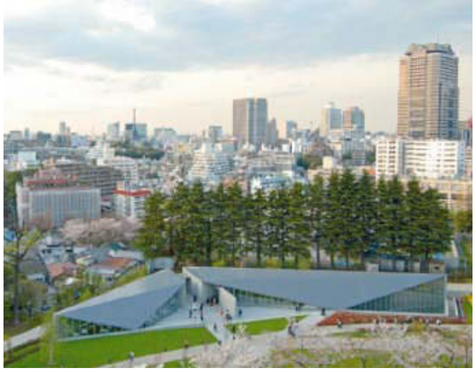


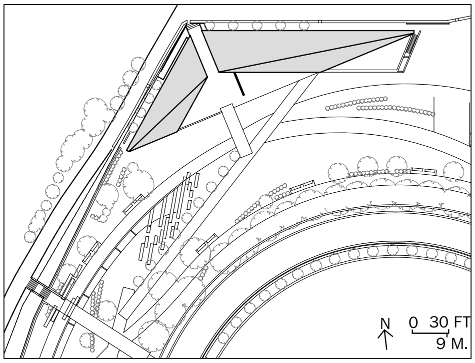
A pair of tentlike roofs that each appear to be made of a single sheet of steel give 21_21 DESIGN SIGHT presence even though the center is mostly underground.

Tadao **Ando** and collaborator Issey Miyake manipulate geometry and light to create Tokyo's **21_21 DESIGN SIGHT**



By Naomi Pollock, AIA





Situated at the northwest corner of Tokyo Midtown, 21_21 DESIGN SIGHT's museum and café open onto a triangular terrace that takes advantage of the mixed-use development's parklike setting.

PHOTOGRAPHY: © MITSUO MATSUOKA, EXCEPT AS NOTED; SERGIO PIRRONE (THIS PAGE)

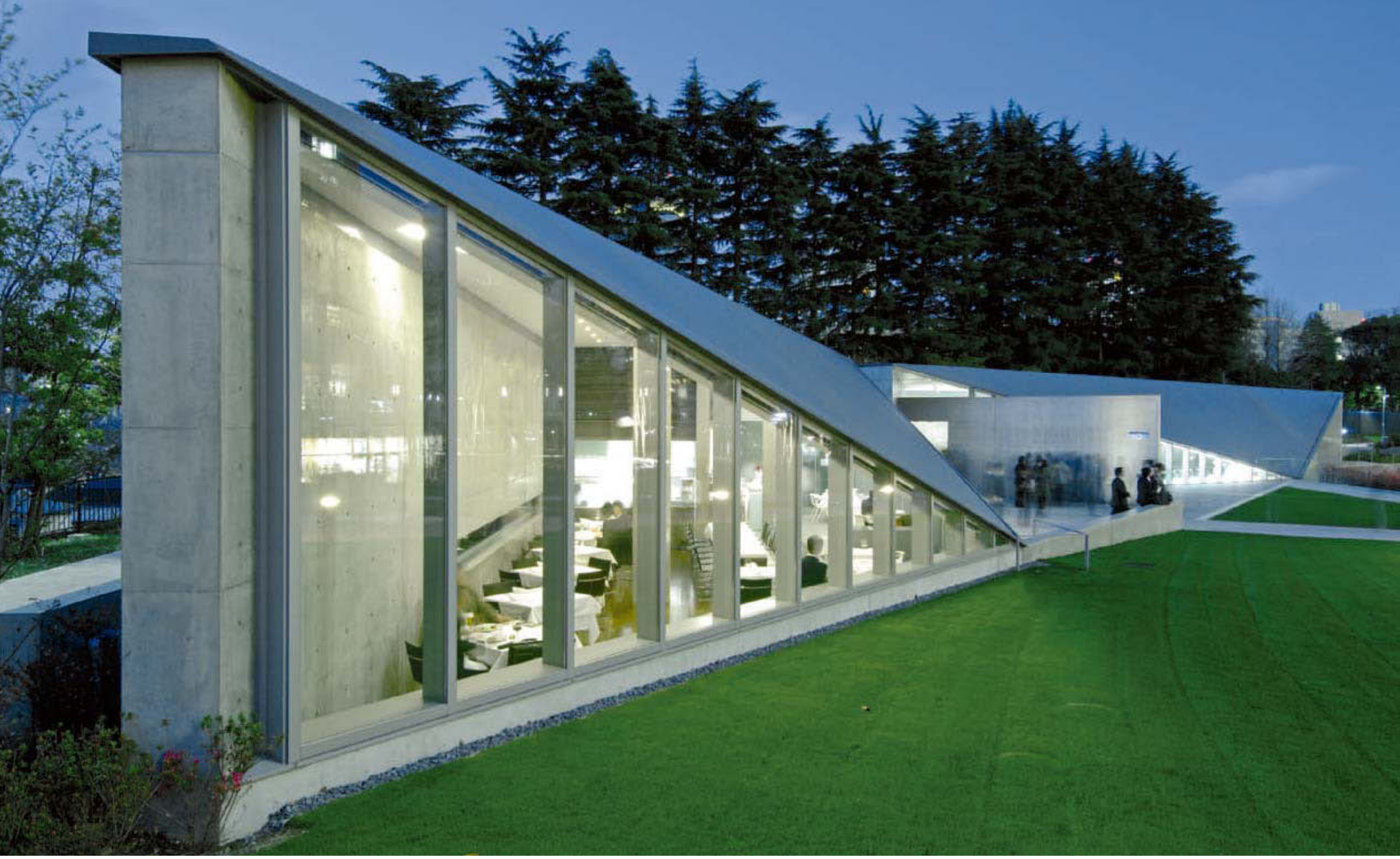
An installation space dedicated to design, 21_21 DESIGN SIGHT is Tadao Ando's concrete contribution to Tokyo Midtown. But conceptually, it is closely interwoven with the ideas of fashion great Issey Miyake. Draped with what appears to be a single sheet of steel, the building is an architectural play on APOC, Miyake' s outfits made from "a piece of cloth." It is also the realization of a dream shared by Miyake and Ando to create a design museum that would be more than a repository for chairs and household appliances from the past, but also a place to stimulate the design of the future.

Their idea began to take shape when developer Mitsui Fudosan offered to build the museum a home in Tokyo Midtown. Although not required to do so by the city, the developer wanted to include cultural facilities in the 25-acre mixed-use complex. However, by the time the company asked Ando to complete a preliminary study in the spring of 2003, design and construction for other Midtown projects were well under way and the permissible floor-area ratio had reached its allowed maximum. Because the requisite percentage of open space was already fixed, Ando could design only a 16-foot-tall structure above ground and would have to submerge much of the program. Even then, the constrained site did not allow enough room for the project as first envisioned, so the museum directors eliminated the planned archive, making display 21_21 DESIGN SIGHT's primary mission.

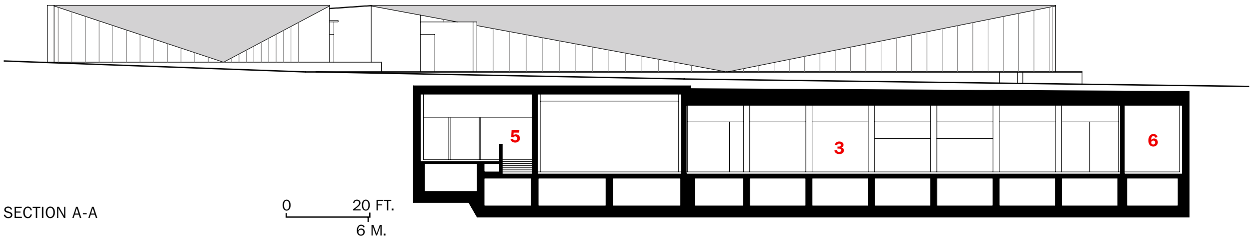
The two-story, 4,252-square-foot museum is actually one of two trapezoidal buildings that Ando designed for the site. Its twin is a single-story, 2,174-square-foot building containing a café. United by an exterior passage, these two halves of the project add up to a sleek, triangular figure that follows the lines of a public walkway rimming Midtown's northwest corner. Both volumes abut the path with a rear wall of concrete, but face Midtown's massive forms with separate, tentlike, folded-steel roofs, each one tapering to a point that practically touches the ground in front.

While the café and museum function independently, their entrances face each other at grade. Diners are greeted by the café's open kitchen and tables oriented toward the parklike setting. Design mavens arrive at a reception area and then descend to the museum's main floor and its two galleries by way of Japan's only trapezoidal elevator or a floating concrete stairway. Echoing the building's geometric mantra,

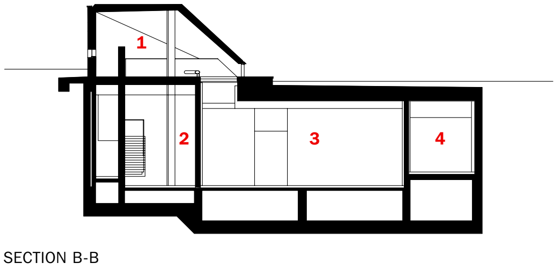
Naomi Pollock is RECORD*'s Tokyo-based correspondent.*

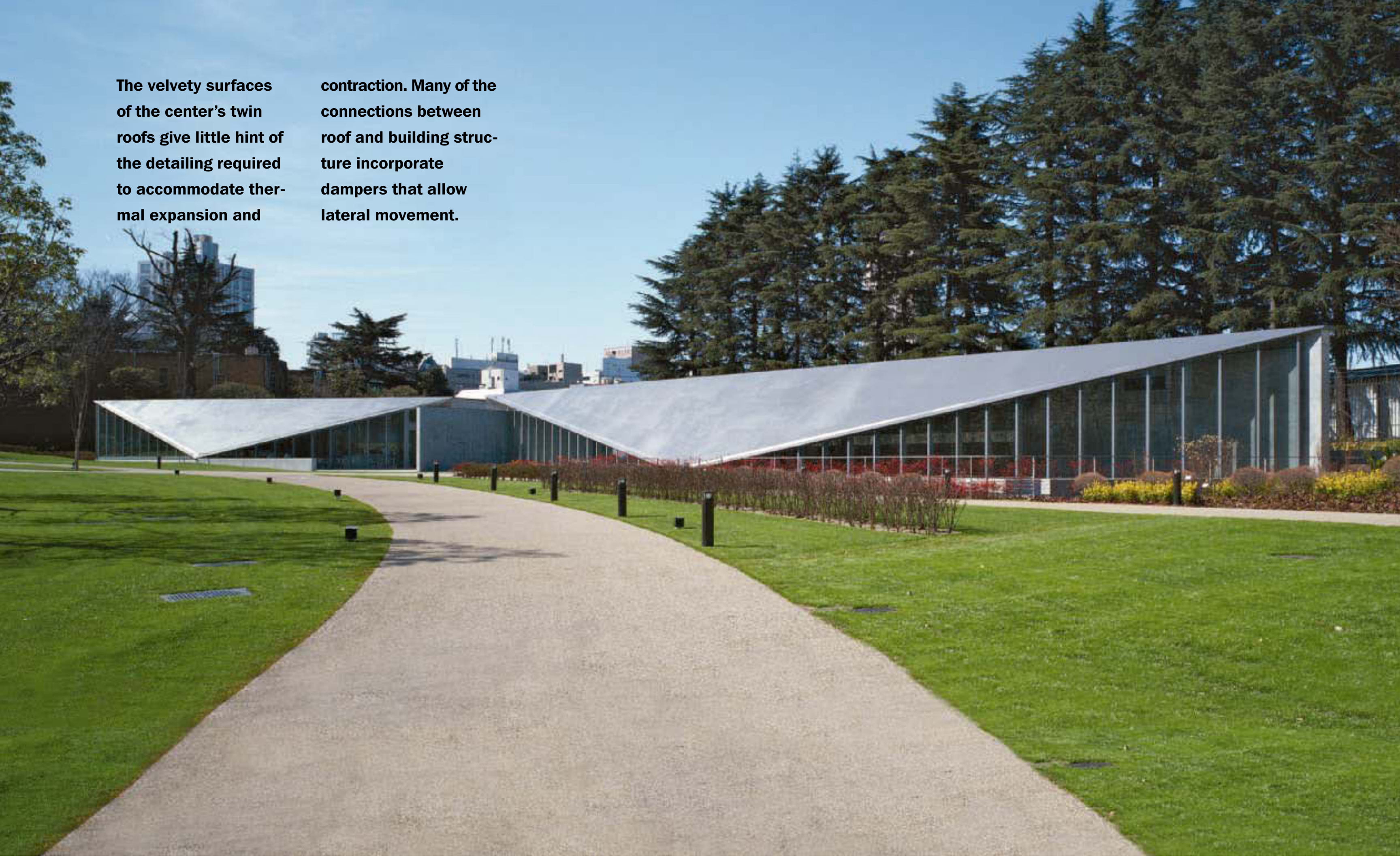


The triangular slices of curtain wall that enclose the museum entry lobby (below) and the café (above) reinforce the project's geometric mantra.

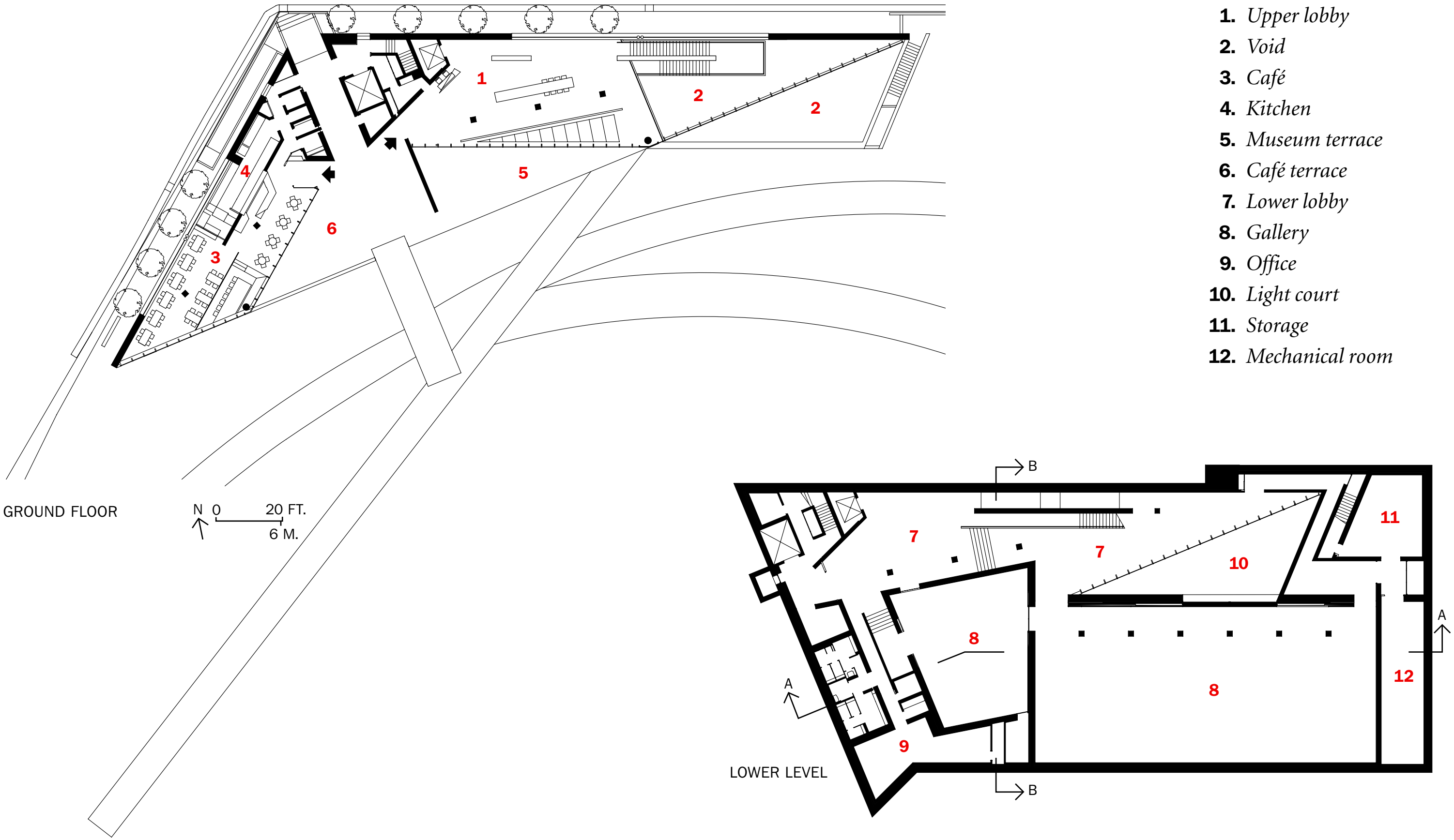

5
3
6
SECTION A-A
0
20 FT.
6 M.

1. *Upper lobby*
2. *Lower lobby*
3. *Gallery*
4. *Office*
5. *Foyer*
6. *Mechanical room*


1
2
3
4
SECTION B-B



The velvety surfaces of the center's twin roofs give little hint of the detailing required to accommodate thermal expansion and contraction. Many of the connections between roof and building structure incorporate dampers that allow lateral movement.


1
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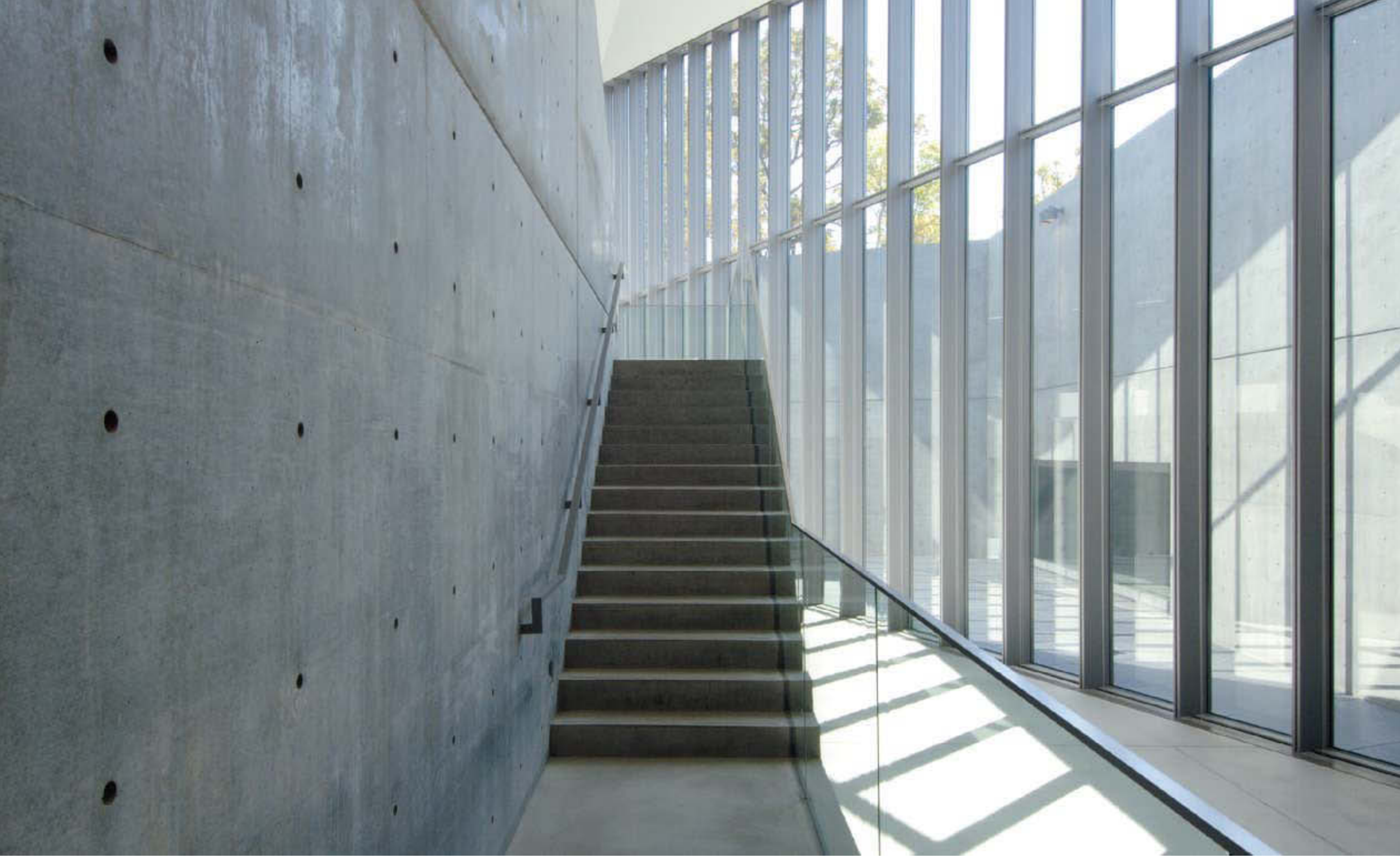
GROUND FLOOR
N 0
20 FT.
6 M.
B
7
7
10
11
A
8
12
8
A
9
LOWER LEVEL
B

1. *Upper lobby*
2. *Void*
3. *Café*
4. *Kitchen*
5. *Museum terrace*
6. *Café terrace*
7. *Lower lobby*
8. *Gallery*
9. *Office*
10. *Light court*
11. *Storage*
12. *Mechanical room*

PHOTOGRAPHY: © SERGIO PIRRONE (OPPOSITE, TOP)

Although every nook and cranny of 21_21 DESIGN SIGHT is used for installations, the museum has two dedicated galleries on its lower level. The largest of these spaces (all photos, this page) abuts the triangular double-story light court. The gallery has a rectangular layout and 16-foot-high ceilings, making it well suited for the display of a wide variety of exhibition material.



A double-story light court, angled walls, and level changes make the subterranean gallery level surprisingly fluid and full of daylight.

one gallery is a trapezoid illuminated by indirect light from above. The other is a 16-foot-tall rectangle with a row of columns along one edge.

Modulated by subtle elevation changes and angled walls, the lower level is remarkably fluid and daylight-filled. To a large extent, Ando overcame the hurdles associated with building underground by creating a large trapezoidal void that unites the two floors. Composed of two adjacent triangles, one a double-height interior room and the other an exterior courtyard, the void dominates the downstairs. Open to the sky, the courtyard can be used to convey large objects to the lower level. More important, by creating a direct connection to the outdoors, this space serves to loosen up the interior's corsetlike concrete enclosure, allowing it to breathe.

Through the foundation bearing his name, Issey Miyake guides exhibition content, but his ideas also permeate the fabric of the building itself. Made of ⅝-inch-thick steel, the museum's 177-foot-long roof reads as a single velvety surface. However, it is composed of 46 7-foot-wide plates of various lengths that were welded, sanded, and treated with six coats of fluoropolymer paint on-site. Because the roof expands and contracts an inch or more annually due to temperature swings, its conventional steel structural joist and beams are rigidly secured at only two points, one in front and one in back, which also transfer seismic loads to the foundations. Everywhere else—the roof is additionally supported at 12 exterior points and by three reinforced-concrete columns under its ridge—connections with rubber dampers allow the steel cover to slide laterally. "The process of constructing the roof was the climax of the project," says Ando.

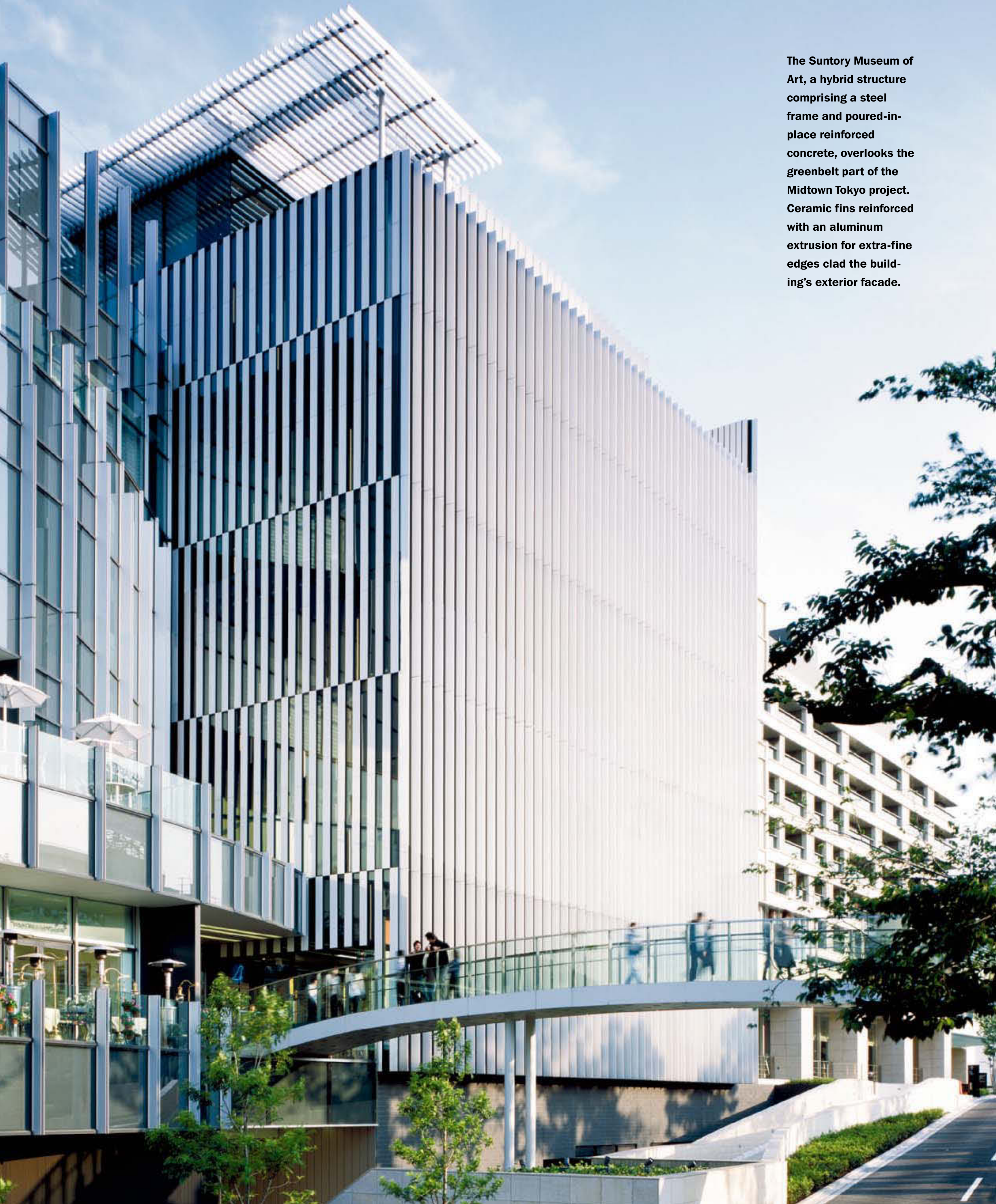
Riddled with visual and verbal puns, 21_21 DESIGN SIGHT is less taut and more playful than many of Ando' s previous works. Like the roof, many details follow Miyake's thinking: The upper level's 36-foot-long strip window is a single pane of glass, the ticket counter is a single piece of aluminum, and each fire extinguisher is swaddled with a single sheet of gray metal. Even its name is a play on words and numbers. "For good design, you need better than perfect eyesight," laughs Shigetoshi Hiraki, the center' s C.E.O. Light-hearted and whimsical, these inside jokes and clever catchphrases are well matched with the quirky, experimental objects that finally have a place of their own. ■

Project: *21_21 DESIGN SIGHT, Tokyo*
Architect: *Tadao Ando Architect & Associates—Tadao Ando, Masataka Yano, Rei Hirano, Tomonori Miura, design team*
Associate architect: *Nikken Sekkei—Ken Kannari, project architect*
Engineers: *Nikken Sekkei (structural and m/e/p)*
General contractor: *Takanaka Corporation + Taisei Corporation*

Sources
Metal roofing: *Kawada Industries*
Curtain wall: *YKK AP; Techno Namiken*
Interior lighting: *Elco Toto; Yamada Shomei*
Elevators: *Hitachi*

ONLINE: To rate this project, go to **architecturalrecord.com/projects/**.

PHOTOGRAPHY: © MASAYA YOSHIMURA/NACASA & PARTNERS
(OPPOSITE, TOP AND BOTTOM RIGHT); SERGIO PIRRONE (OPPOSITE, TOP)



The Suntory Museum of Art, a hybrid structure comprising a steel frame and poured-in-place reinforced concrete, overlooks the greenbelt part of the Midtown Tokyo project. Ceramic fins reinforced with an aluminum extrusion for extra-fine edges clad the building's exterior facade.

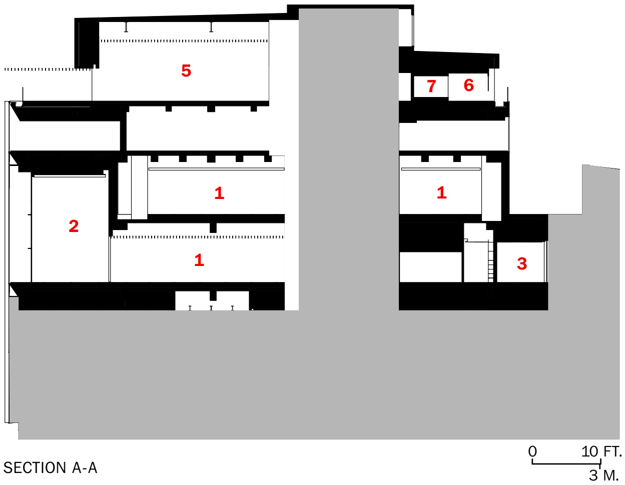
Kengo **Kuma's** signature screens, deployed inside and out, create a serene oasis for viewing works in Tokyo's **SUNTORY MUSEUM OF ART**

By Naomi Pollock, AIA

Though embedded in a mammoth, mixed-use development, the comparatively modest 50,590-square-foot Suntory Museum of Art confidently stands its ground. The product of architect Kengo Kuma, the Suntory does not need signage or street access to assert itself. Instead, its articulated, exterior massing, clad with elegant, ceramic fins, deftly distinguishes the museum from Tokyo Midtown's looming, terra-cotta-covered towers.

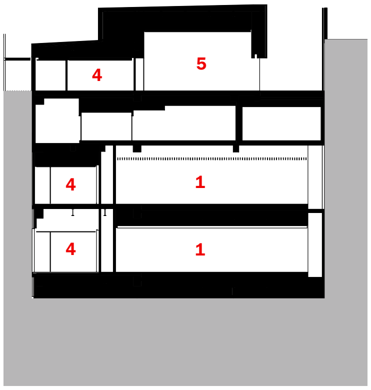
From the outside, the museum's protruding form practically reads as an independent entity. But its interiors are fully integrated with Midtown's multistoried shopping concourse: Visitors enter the museum on the mall's third floor, at the northwest corner, where they find the gift shop, café, and elevators. However, the prescribed route for viewing the private collection actually begins on the fourth floor, where museumgoers arrive at a dimly lit gallery to view the works amassed by Suntory Limited, one of Japan's largest liquor producers. The museum's 3,000 historic objects include paintings, textiles, ceramics, and lacquer, with some designated "Important Cultural Property," and a couple "National Treasure."

From the main gallery, visitors descend a gracious, glass-encased stair to the third-floor atrium, a 31-foot-high space overlooking Midtown's semicircular greenbelt park. The atrium, which is earmarked for large artworks, connects to a second gallery. Museum offices and storage fill the fifth floor, while the sixth floor holds a conference hall opening onto an outdoor deck, a members' club, and an informal tea-ceremony room (Ryuurei) open to the public. The tearoom incorporates new and existing elements, such as the wood frame, woven cedar ceiling, and sliding paper partitions moved from the tearoom at the Suntory's previous location.



SECTION A-A

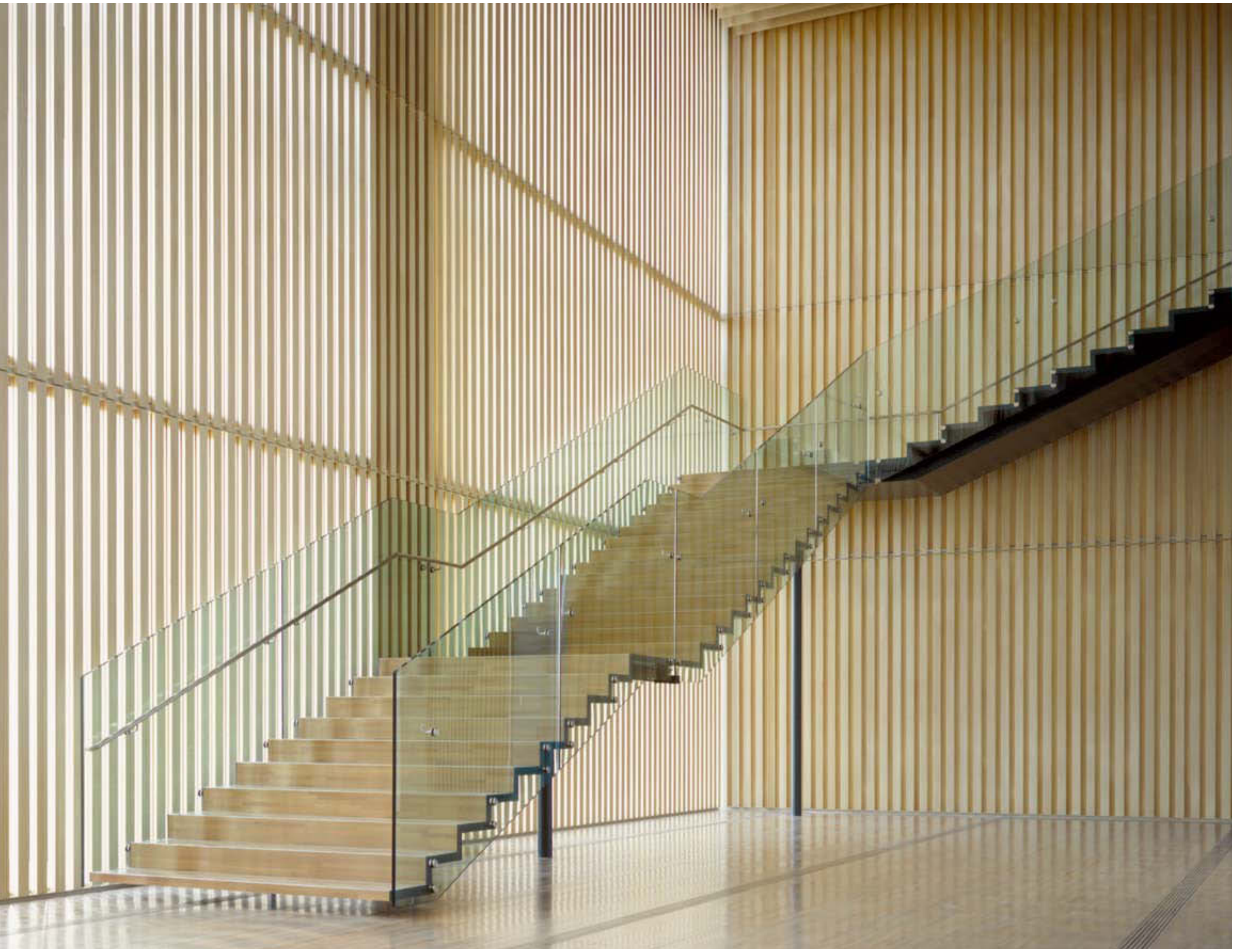
1. *Gallery*
2. *Atrium*
3. *Shop*
4. *Lobby*
5. *Hall*
6. *Ryuurei tearoom*
7. *Small tearoom*



SECTION B-B

The museum is contained on the upper floors of a six-story building in the Tokyo Midtown development. (The shaded areas indicate the base building's elevator shafts, stairs, and other spaces not permitted to be published for security reasons.)

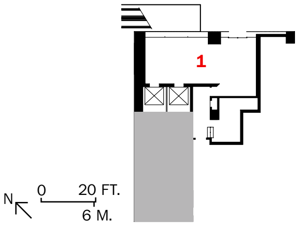
PHOTOGRAPHY: © MITSUMASA FUJITSUKA, EXCEPT AS NOTED



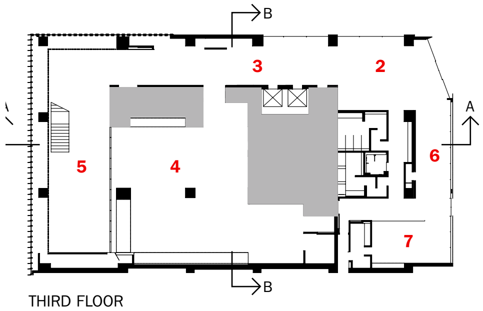
PHOTOGRAPHY: © DAICI ANO (BOTTOM RIGHT)

The main stair connecting the third and fourth levels is made of glass, steel, and recycled oak from Suntory whiskey barrels (above). Screens of paulonia wood with 3-inch-wide slats are mounted along the glass wall and ceiling (far left). In the clothing boutique on the second floor, curved plywood fins animate the space (left). Kuma designed the informal ceremonial tearoom (opposite two) from new and old elements, including paper partitions and a woven cedar ceiling taken from the Suntory's previous location.

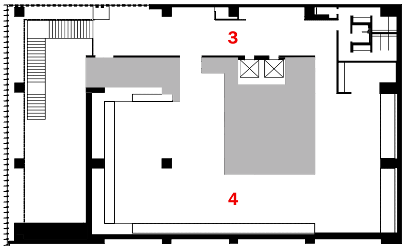
1. *Entrance*
2. *Main entrance*
3. *Lobby*
4. *Gallery*
5. *Atrium*
6. *Shop*
7. *Café*
8. *Member's salon*
9. *Hall*
10. *Deck*
11. *Roji (small garden)*
12. *Ryuurei (informal) tearoom*
13. *Small tearoom*
14. *Large tearoom*
15. *Mizuya (preparation area for tearoom)*
16. *Tearoom terrace*



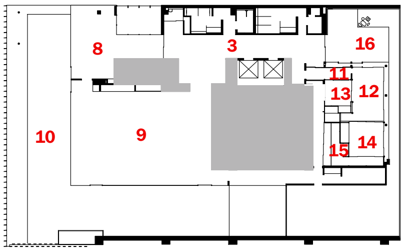
FIRST FLOOR



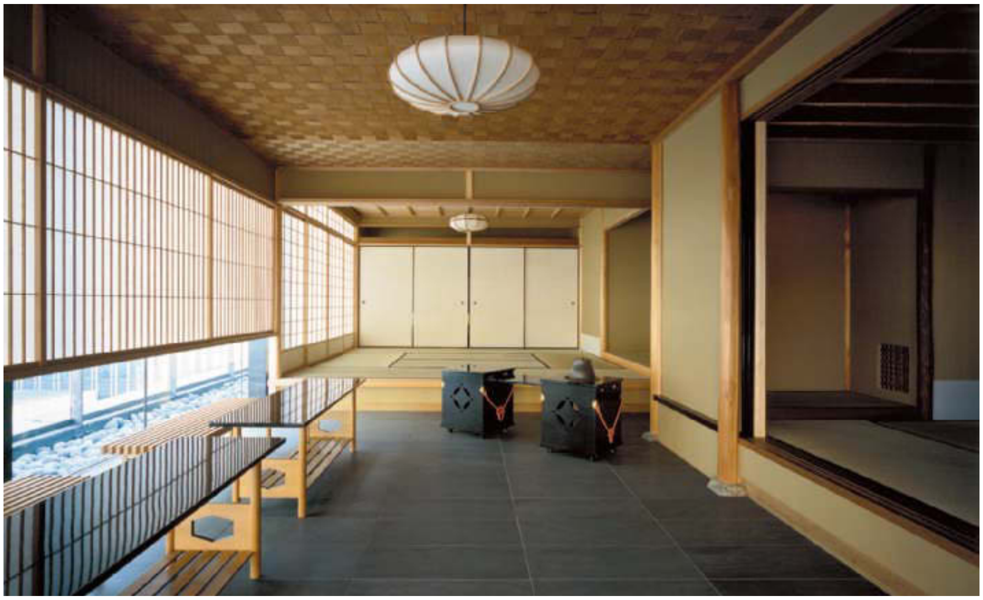
THIRD FLOOR

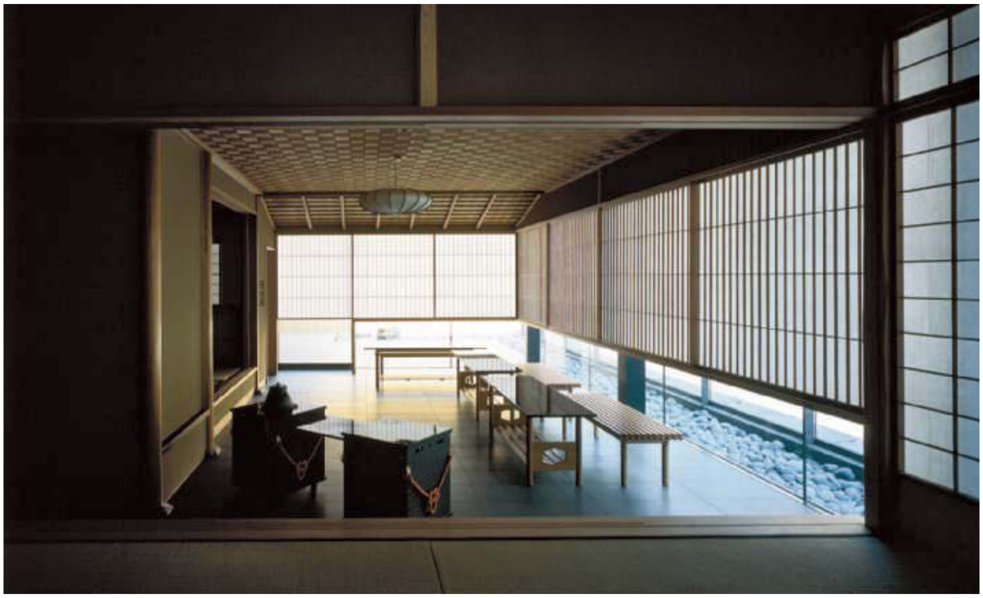


FOURTH FLOOR



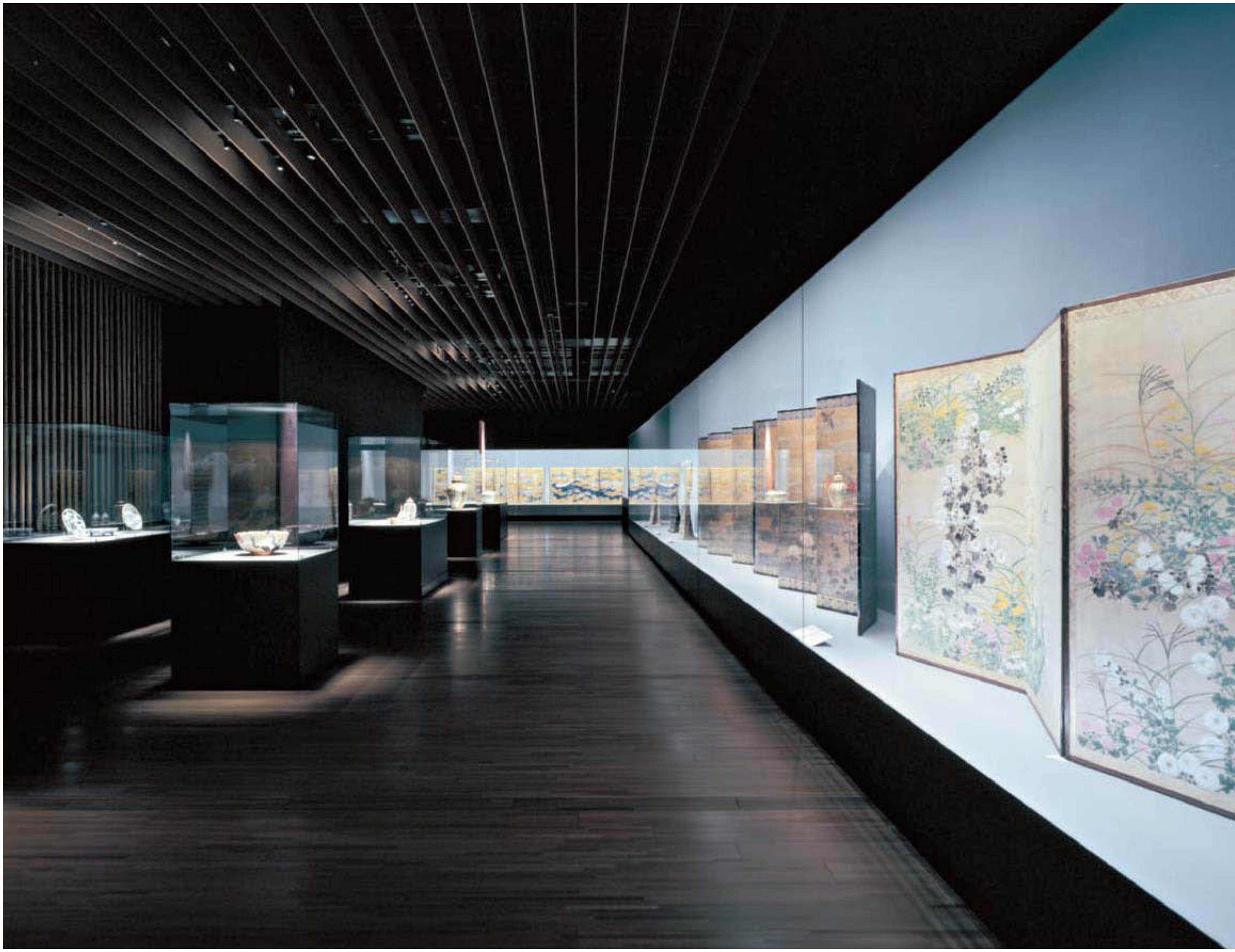
SIXTH FLOOR





Until the company relocated to the city's Odaiba area in 2005, the galleries occupied the top floors of its central Tokyo headquarters. Although Suntory's art collection and corporate offices are now separated, Kuma is responsible for designing the new homes for both. He intended this new facility to evoke traditional, residential architecture. "I didn't want a white box," Kuma explains. "I wanted to design a space like a private house—in terms of light, materials, and scale." Without quoting directly from traditional architecture, Kuma has incorporated into his design delicate, well-crafted elements such as *washi* paper (a paper made from fibers of tree bark), which is affixed to glass partitions; wood floors made from recycled Suntory whiskey barrels; and slatted screens of paulonia wood, the material of choice for kimono storage chests. The client was initially reluctant to build with this notoriously soft material. "But the wood's fragility," argues Kuma, "conveys the intimate feeling of the home."

Kuma prefers the ambiguity given exterior and interior boundaries by screens, which control but do not curtail light and view. "At the beginning, the curator wanted an enclosed museum," the architect recalls. "But I thought that the continuity of space would be more comfortable." Within the galleries, screens of evenly spaced, 3-inch-wide paulonia wood divide the space vertically, and where they are mounted on the ceiling as a veneer over aluminum, mask mechanical equipment. At the museum's perimeter, the wood-framed membranes filter the museumgoers' visual contact with the shopping concourse and the landscape outside. Parroting traditional *muso-koshi* shutters, these movable, overlapping



The dark, shimmering wood floor made from old whiskey barrels and the dark paulonia wood veneer fins along the ceiling set off the historic artifacts exhibited in the galleries (above and opposite, top and bottom left). The museum shop on the third floor (opposite, bottom right) also makes use of paulonia wood veneer screens.

panels of alternating 3-inch-wide, lacquered wood bars cover the atrium's west-facing glass wall. Like their antecedents, these screens can be adjusted to moderate light and view. "Before the 19th century, we needed a special device for ventilation since we did not have glass," explains Kuma. "With the aid of an electrical engineer, I was able to replicate this idea on a large scale." Outside, the porcelain louvers echo the rhythm of the *muso-koshi* inside. Supported by aluminum underpinnings, the milky white fins are spaced 2-feet apart and taper out to a mere ⅓ of an inch, reiterating the delicacy of the finely crafted objects displayed within.

In contrast to the Suntory's sobriety, Kuma's design for Lucien Pellat-Finet's boutique on the second floor seems inebriated. Unlike the tame, repetitive bars fronting the museum, free-form, curved ribs of structural plywood, evenly spaced, wrap the L-shaped boutique interior, giving it a unique identity—classic Kuma with a twist. Straight or curved, Kuma's signature screens are equally effective. ■

Project: *Suntory Museum of Art, Tokyo*
Architect: *Kengo Kuma & Associates + Nikken Sekkei*
Engineers: *Nikken Sekkei (structural, mechanical)*

Sources
Glass: *Singapore Safety Glass*
Ceramic screens: *Inax Corporation*
Aluminum curtain wall: *Tostem Corporation*

ONLINE: To rate this project, go to ***architecturalrecord.com/projects/***.

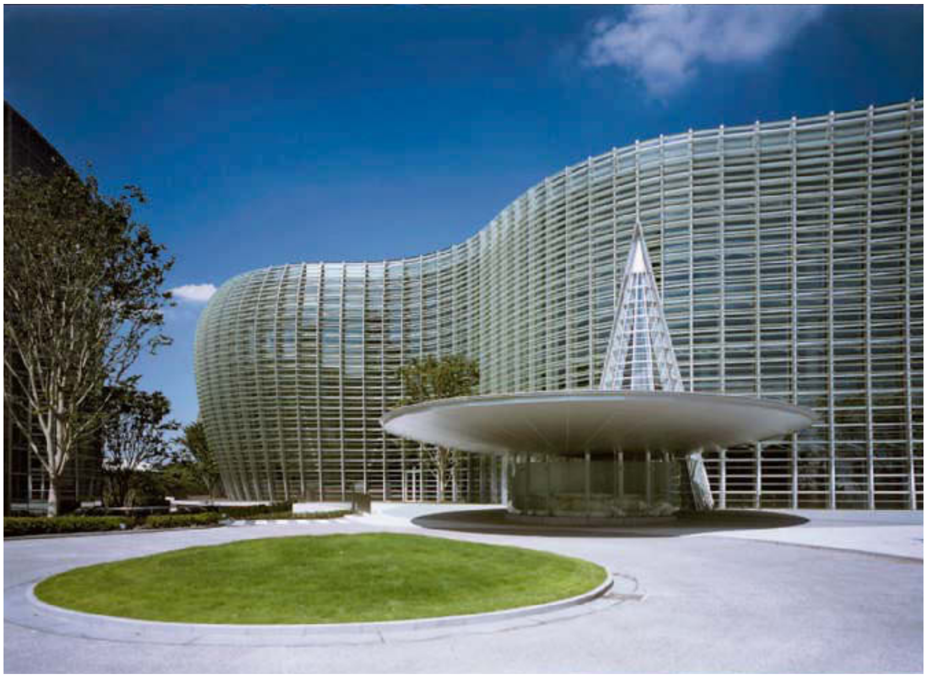
Kisho **Kurokawa** designed for change at Japan's largest art venue, **THE NATIONAL ART CENTER**, a mega museum with no permanent collection

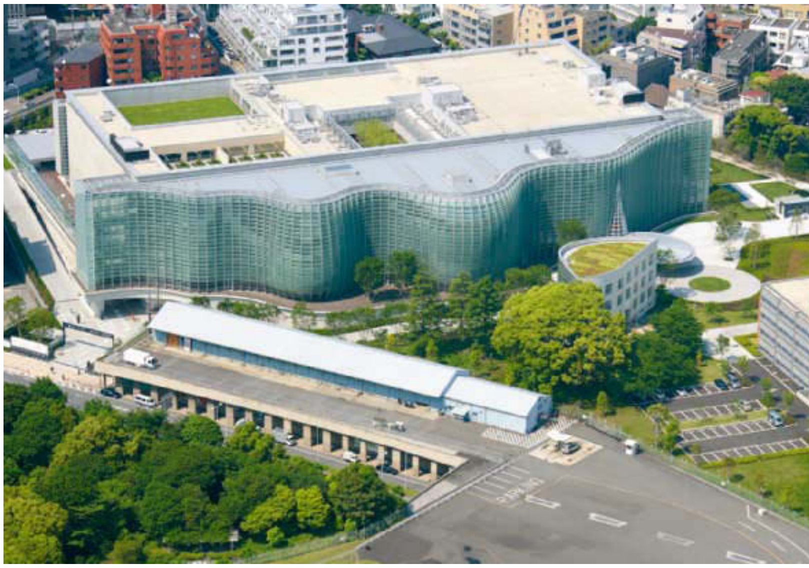
By Robert Ivy, FAIA

To judge by the crowds, the Japanese love art. While four national institutions hold major collections, the crowds at blockbuster traveling exhibitions of masterworks by native artists (Hokusai) or foreign ones (Monet) have catapulted Tokyo and Japan into the front ranks of museum attendance. According to Japanese national museum sources, Tokyo hosted five of the 10 best-attended exhibitions of art in the world last year. The National Art Center, which recently opened in Tokyo, uniquely serves that swelling audience of museumgoers.

According to its director, Hayashida Hideki, "The center will be the first national art institution without a permanent collection." In planning since the 1970s, and designed and constructed between 2000 and 2006, this mega art center combines a random collection of spaces that had been scattered throughout Tokyo, particularly in the Ueno district, into one place—at 12,909 square meters (138, 951 square feet) of exhibition space, the largest in Japan.

Seen aerially, the arts center's dual primary functions stand out against the surrounding rolling greenery of the nearby Aoyama cemetery and the Rappongi district. A short walk away lie the Mori Art Museum in Rappongi Hills, as well as the new Suntory Art Museum and the 21_21 DESIGN SIGHT, the latter two at the new Tokyo Midtown complex. Placed within the footprint of a former military installation, the National Art Center's structure appears split into two distinct formal types: a sensual, undulating glazed wall wraps along an entire facade, gripping a large, boxlike structure. Turf roofs with decks and surprising geometric elements erupting from below grade indicate





A billowing wall of aluminum and glass (opposite and above) creates an organic curtain between the outside and inside of the multilayered center. The precast-concrete box of exhibition space and the glazed public areas, nestled on a green site in the densely settled Rappongi district, are clearly defined (right).

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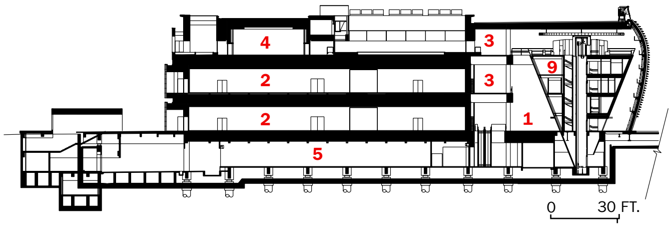
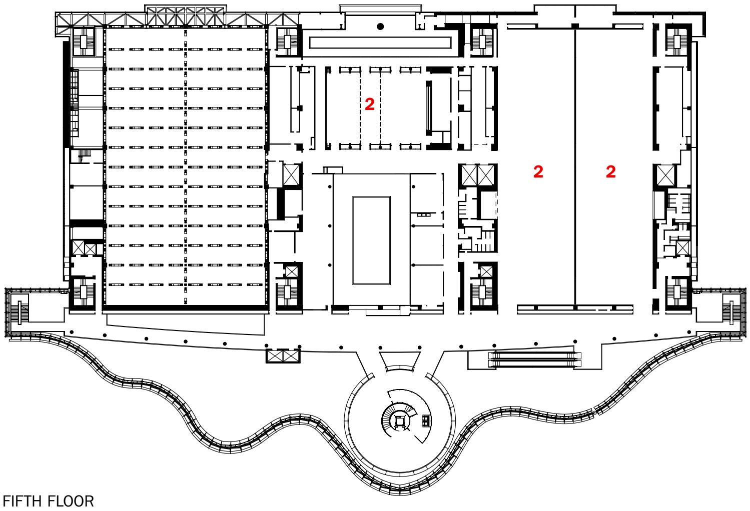
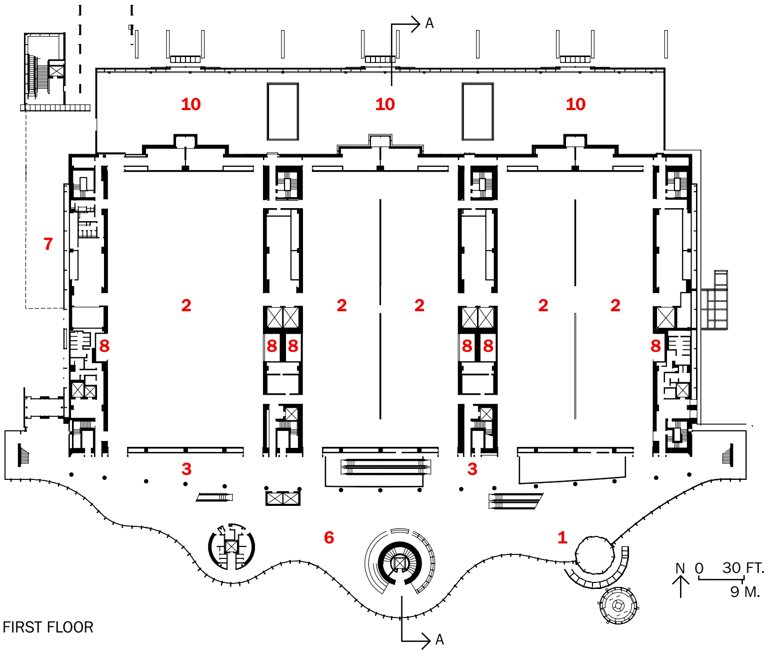


SECTION A-A

1. *Entrance lobby*
2. *Public exhibition room*
3. *Gallery*
4. *Large training room*
5. *Workroom*
6. *Coffee shop*
7. *Corridor*
8. *Panel storage*
9. *Equipment space*
10. *Outdoor exhibition area*



FIFTH FLOOR



FIRST FLOOR

that the center comprises multiple levels, with two basement floors and six above-grade floors not obviously apparent from the air.

According to the late architect Kisho Kurokawa (see page 36), the center forms a giant "display machine." In addition to changing shows by visiting master artists, several other exhibition types required programmatic attention. Among the most pressing demands were spaces and operational requirements for national art associations, as well as special exhibitions from Japan and outside the country. To serve those needs, the multistory building functions in a pragmatic way: Art can be trucked to basement receiving zones, cataloged, judged (if need be, by art association jurors), and lifted by elevator to the appropriate zone where movable partitions divide up the space.

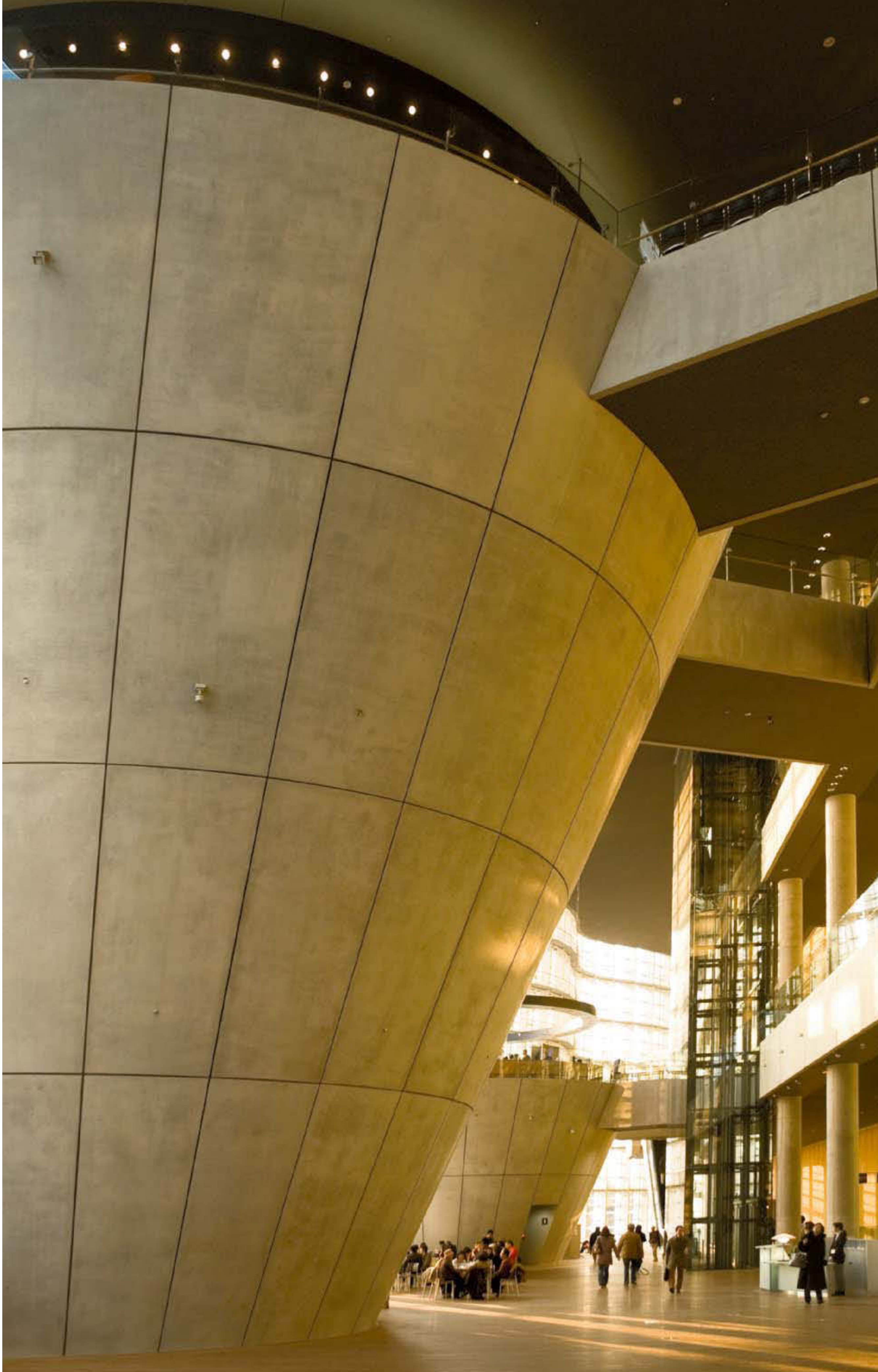
The utilitarian structure forming the core houses seven large, column-free exhibition halls for temporary shows. At 21,527 square feet each, blocks of space can be combined for a variety of exhibition types, including the massive NITTEN Japan Fine Arts Group show. Formerly held at the Tokyo Metropolitan Art Museum, this, the largest art exhibition in Japan, showcases 12,000 works of art annually from late July to September, consuming 107,639 square feet in five collection "blocks."

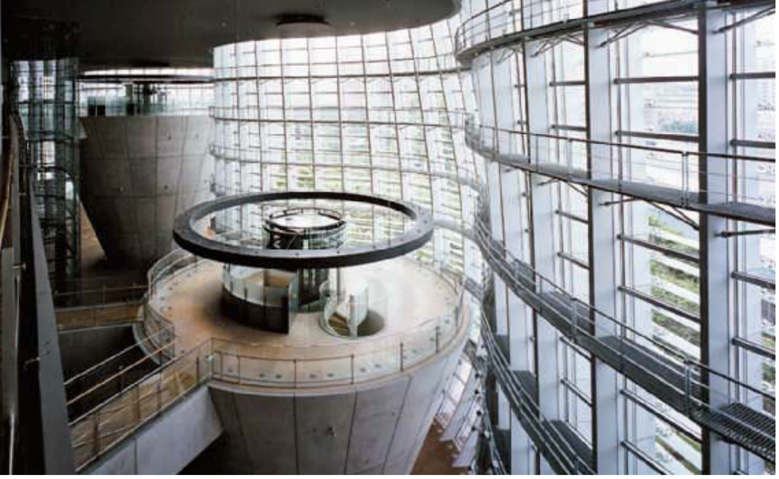
In addition to display space, the center accommodates educational programs, lectures, gallery talks, and symposia in its art library, and on sunny afternoons, it attracts visitors to its voluminous public areas. Crowds saunter past the restaurant, three cafés, and the museum shop, housed within the billowing, glazed folds that form the atrium. This cavernous, Piranesian space (70,86 feet high), defined by the filtered light of the large interior, reflects the architect's personal commitment to the term *symbiosis*. In referring to this term in a social context, Kurokawa means placing the center's visitors in proximity with nature: "As the trees surrounding the museum grow, they will enclose the atrium in a forested public space."

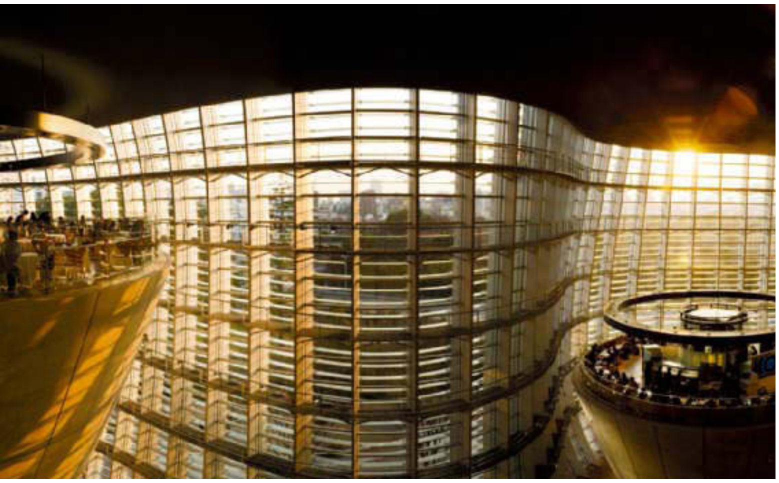
Strong geometry sets a heroic scale to the interiors. Two inverted cones, reached by connecting walkways or elevators, house a restaurant and a café on their upper levels. According to the architect, the perching cones mask a real need: making maximum use of floor area by reversing the usable space. An overlook from exhibition levels peeks all the way down to the subterranean zone, allowing visitors to survey the unfolding scene and providing glimpses out to the surrounding cityscape. The total interior environment serves, like the Great Court at the British

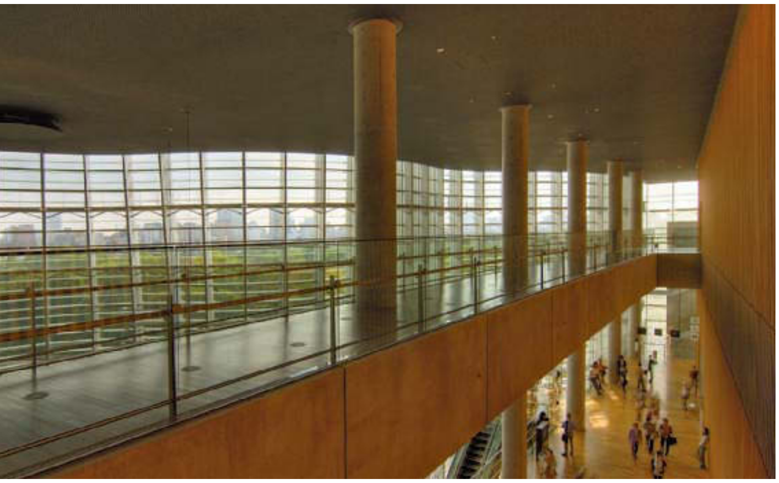
PHOTOGRAPHY: © DAIJI KEMMOCHI (OPPOSITE)

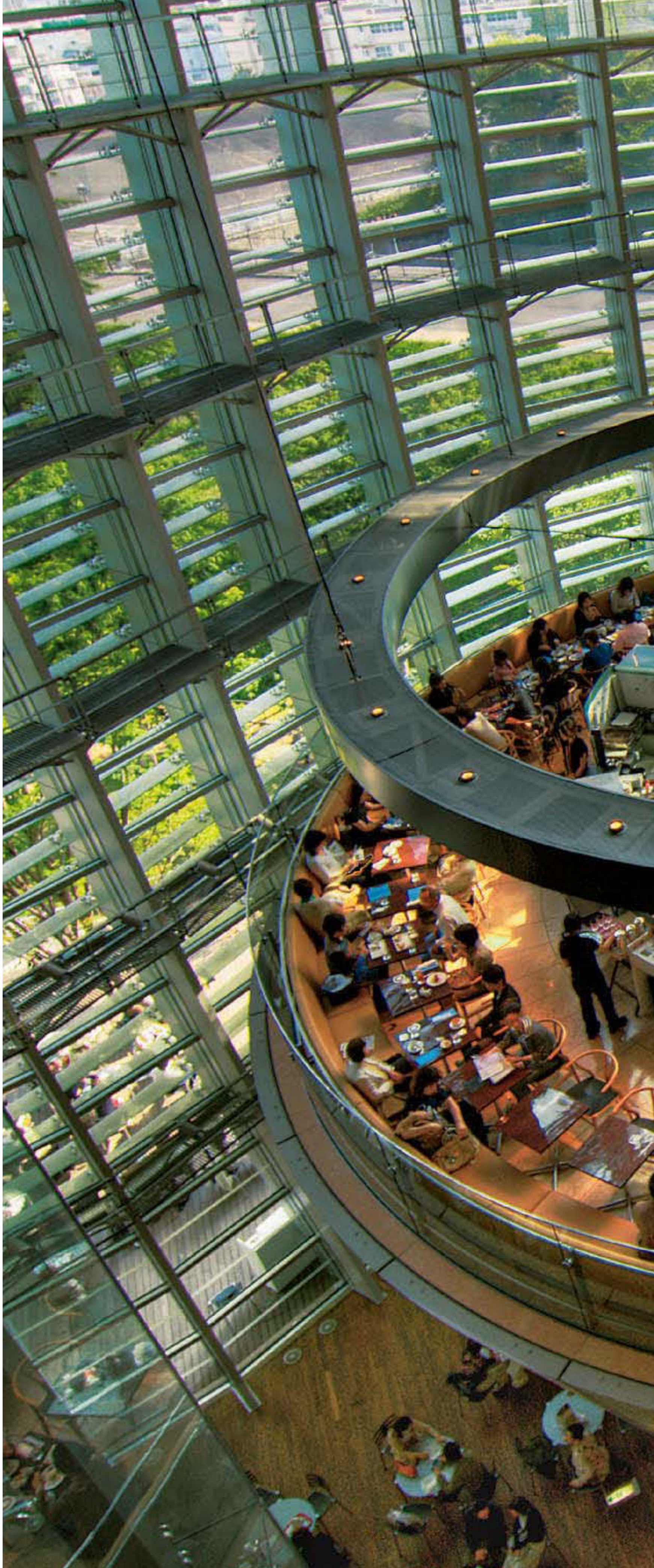
Twin inverted cones free up floor space in the public atrium by housing utilities within them. Connected by bridges to galleries and pierced by elevators, the 71-foot-high atrium displays Piranesian qualities of light, shadow, and verticality. Floors of Borneo ironwood extend outside the building.





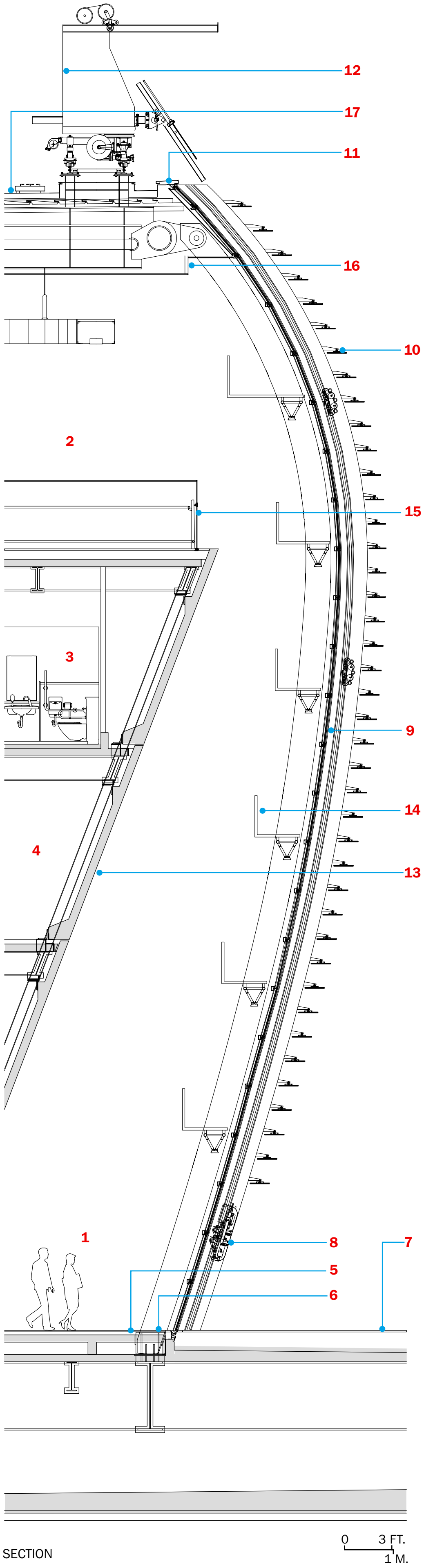






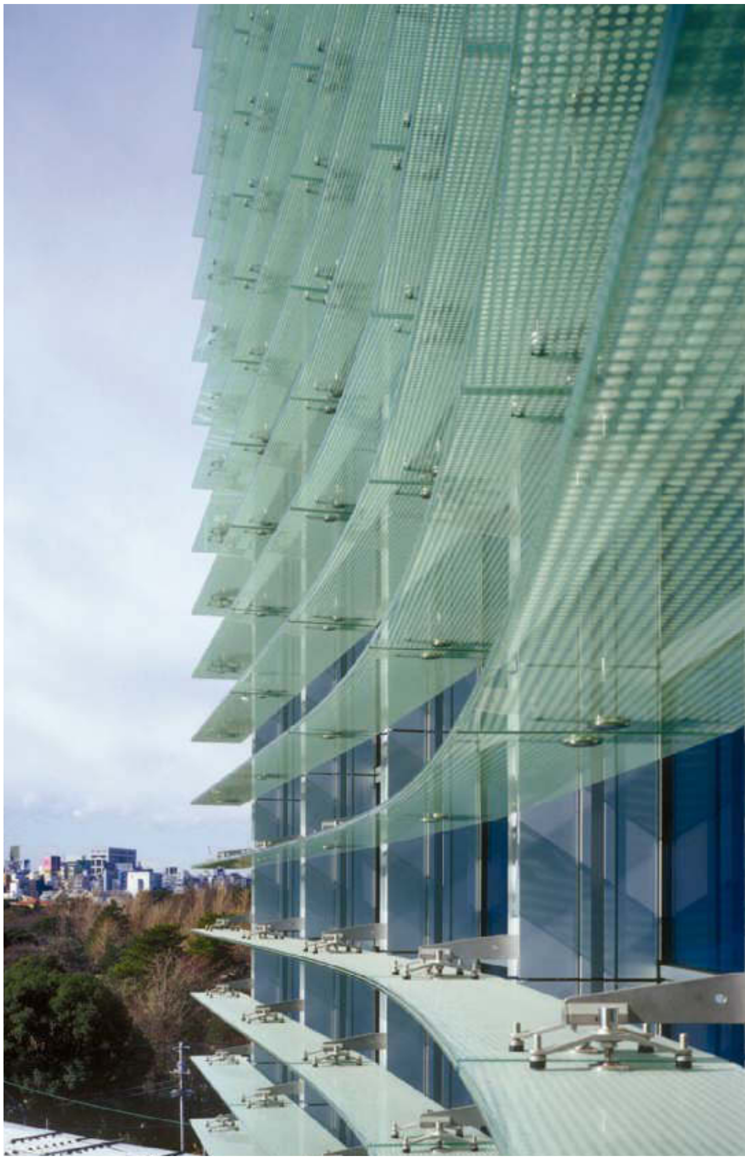
PHOTOGRAPHY: © SHINKENCHIKU-SHA (TOP); DAIJI KEMMOCHI (MIDDLE); PETER GORDON (BOTTOM AND OPPOSITE)

The upper level on the large, cone-shaped pedestals house the restaurant (right), where diners perch above weekend crowds swirling below. Views from the balconies of the 6-story structure (top and middle) and from bridges (above) add perspective and scale to the massive art center.

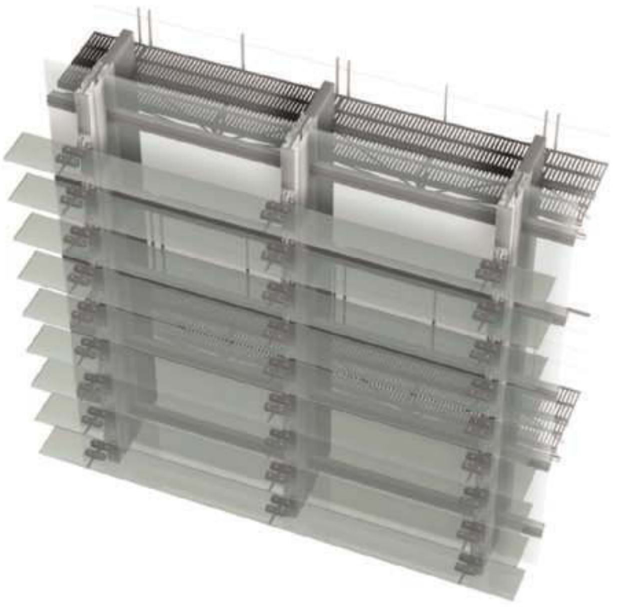


SECTION

1. *Entrance hall*
2. *Restaurant*
3. *Handicap toilet*
4. *Mechanical Room*
5. *Floor*
6. *Air-conditioning*
7. *Outdoor terrace/wood deck*
8. *Robotic cleaning unit*
9. *Double-glazed curtain wall with steel mullions*
10. *Fritted-glass louver*
11. *Aluminum coping*
12. *Roof car*
13. *Calcium silicate board*
14. *Glass maintenance catwalk*
15. *Handrail and tempered glass*
16. *Smoke exhaust*
17. *Metal roof*



The window wall of steel supports, aluminum, and glass provides low-e glazing with fritted, successive exterior glass shelves for sun control (right and above).



Museum, as a kind of enclosed piazza.

Kurokawa, who hit the world stage as a leader of the Metabolist movement in the 1960s, has evinced an interest in underlying philosophy as well as technology. As his early Metabolist works, such as the Nakagin Capsule Tower (1970), demonstrated, his fascination included modular, replicable elements as well as the future of the whole city. Further works, such as the Kuala Lumpur airport, have exhibited clarity of function, an interest in structural expression, and social amenity (the introduction of internal rain forests within the terminals). Subsequent large projects, including major museums, stadiums, and master-planning work, have carried forward big ideas at the large scale.

At the National Art Center, Kurokawa married the bold idea of a major urban center to symbiosis, focusing attention on human comfort and technological systems. For the glazed wall, he said, "The energy-saving design cuts out solar heat and ultraviolet rays." A one-of-a-kind robotic apparatus assists in cleaning the complex facade, with its protective ribbons of glass. Materials, such as ironwood imported from Borneo, soften public areas and extend into the outdoors, stretching perception of indoors and out.

Constructed in the main of precast concrete, surmounted by the glazed atrium of structural steel and aluminum, the large new center contains a total of 536,408 square feet—a totality that could overwhelm most art institutions or the cities they inhabit. Kurokawa should be credited for his skill in artfully settling this foursquare mega structure into the green heart of Tokyo and gracing it with a facade that creates its own intriguing, sculptural presence. While functionality may have been part of the program, its curatorial utility will require multiple exhibitions to judge. The continual crowds will only increase at a facility that has been booked for five years, and whose target visitation for 2007, its inaugural year, numbers 1.5 million people. ■

Project: *National Art Center, Tokyo*
Architect: *Kisho Kurokawa Architect & Associates—Kisho Kurokawa, architect of record; Nihon Sekkie, associate architect*
Interior designer: *Kisho Kurokawa*
Engineer: *Nihon Sekkei*

Sources
Glass curtain wall: *Tostem Corporation; Shin Nikkei Company*

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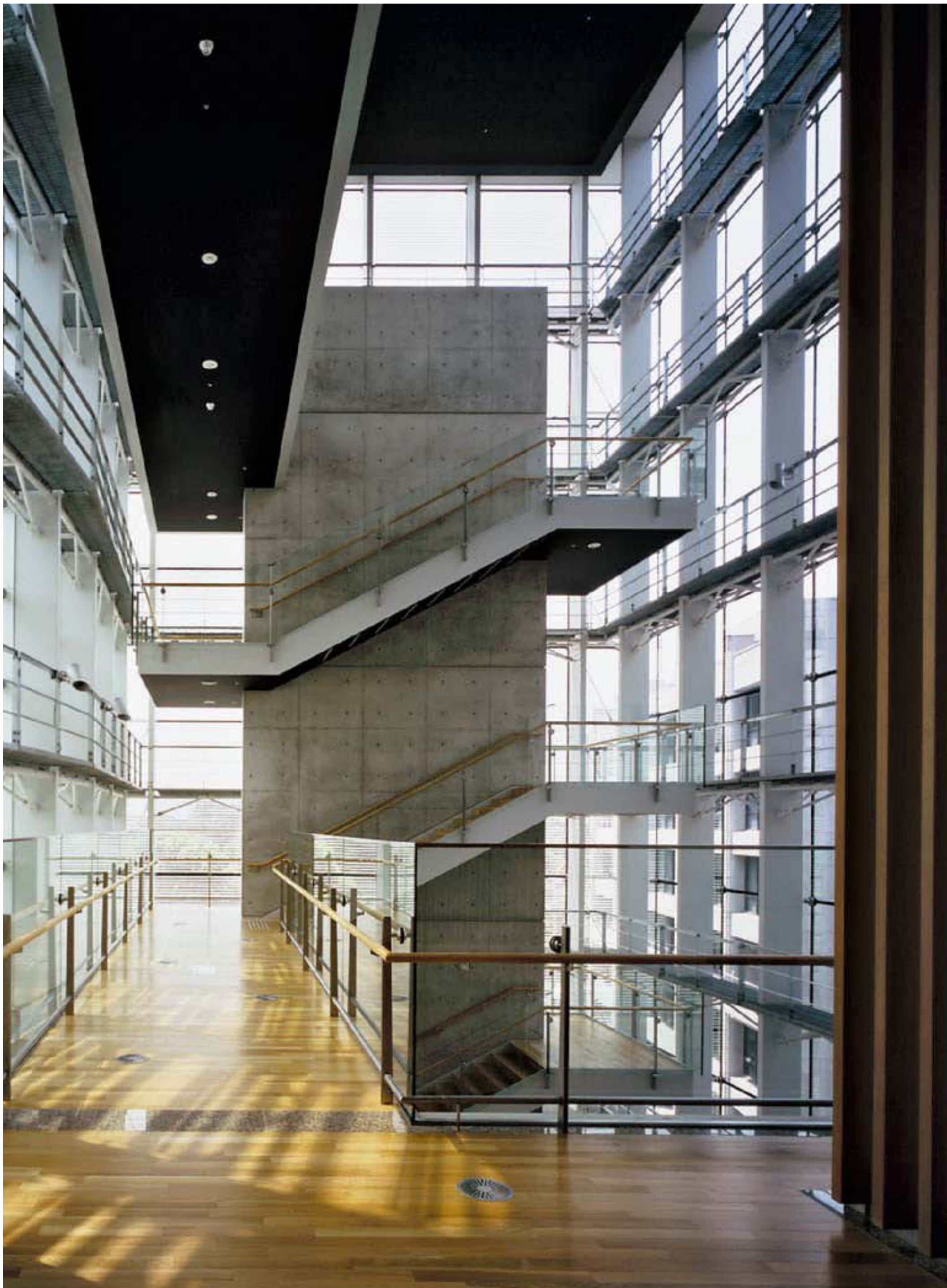
The light-filled atrium interior contrasts with a controlled environment of natural and artificial top lighting of the gallery spaces.



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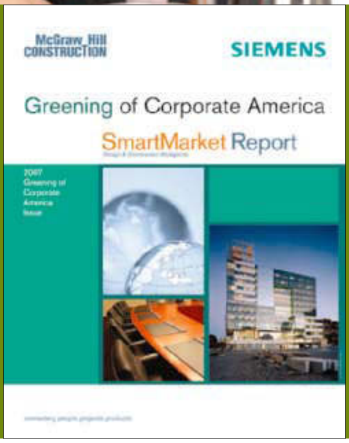

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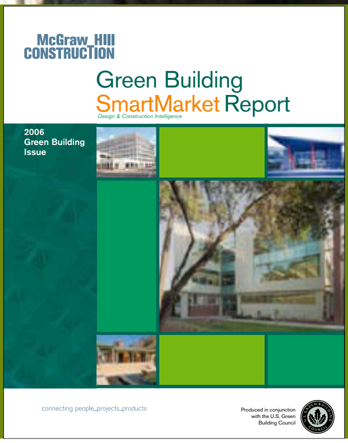

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COLLEGES & UNIVERSITIES

The new arms race

Spending on athletics buildings and student centers is rising at colleges and universities nationwide, raising questions about who benefits and the role that design can play.

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KENYON ATHLETIC CENTER

Gambier, Ohio

Gund Partnership's barnlike, largely glazed building accommodates 22 varsity teams, recreational athletes, and student activity functions in a space that remains open and airy.

STUDENT CENTER EXPANSION

La Jolla, California

Working on a constrained site, Public Architecture and Planning expands a student center with outdoor spaces that use the region's balmy climate to their advantage.

TANGEMAN UNIVERSITY CENTER

Cincinnati, Ohio

Gwathmey Siegel carves out a vast atrium inside a 1930s-vintage student union, then surrounds the old building with two new wings whose contemporary look matches recent neighbors.

By James Murdock

There's a new arms race on, one that has nothing to do with Iran or North Korea. Colleges and universities are competing to attract talented athletes—and buildings are proving an important weapon. In 2006, oilman T. Boone Pickens gave Oklahoma State University an eye-popping $165 million to remake its athletic facilities. A few years earlier, Kenyon College, in Gambier, Ohio, similarly received an anonymous gift totaling $35 million toward the $70 million cost of its own new Athletic Center, which we feature in this month's Building Types Study.

Observers worry that such largess comes at the expense of giving for academic buildings and dormitories, to say nothing of improving scholarship itself. *The Chronicle of Higher Education*, in an October 2007 article, noted that donations to the nation's biggest athletics programs are rising while overall giving at these schools remains flat—and that sports-related construction spending is growing at a rate three times that of other projects. Athletics directors contend that they are catching up on decades of deferred work, and that a winning sports team helps loosen donors' wallets for giving to other programs. But it's important to ask what $70 million really buys, much less $165 million, and if there are indeed other beneficiaries.

With its Kenyon Athletic Center, the Gund Partnership created a space so attractive that professors compete to hold their academic classes in its meeting rooms. The building also functions as a student center, providing space for clubs and other activities—a locus of community for the entire school. Combining sports with student-center functions seems a proper approach to ensure that everyone shares in the funding bonanza, but sometimes program needs make this impossible. The University of Cincinnati, for instance, invested in both its athletics buildings—which occupy the heart of campus—as well as renovating its student union. At 180,000 square feet, Gwathmey Siegel's Tangeman University Center is now almost large enough to accommodate all of the roughly 35,000 full- and part-time students at once. Yet bigger needn't be better. One tenth as large, Public Architecture and Planning's expansion of the original Student Center at the University of California, San Diego neatly activates the building's exterior with patios and walkways where students can gather.

One hopes that academics still come first, but athletics facilities and student centers are increasingly and undeniably important to members of the millennial generation as they evaluate their higher-education options. Although these young adults communicate largely online, they seek creature comforts and style when it comes to the physical spaces where they can meet face-to-face, play, and exercise. Quality architecture could well be a school's best weapon in the arms race. ■

One: KENYON ATHLETIC CENTER

Gambier, Ohio

Gund Partnership organizes a massive athletics program and de facto student center under one roof, giving the space an open and airy feel.

By James Murdock

Architect: *Gund Partnership—Graham Gund, FAIA, principal in charge; Dan Rutledge, project architect; David Zenk, AIA, co–project architect; Bob Caddigan, construction administrator*
Client: *Kenyon College*
Consultants: *Arup (structural and m/e/p); David Beraducci Landscape Architecture (landscape); Grenald Waldren Associates, RETEC Group (lighting); Acentech (acoustical and AV); Counsilman Hunsaker (pool); Bird and Bull Consulting Engineers (civil engineering)*
Construction manager: *A.M. Higley*

Size: *265,000 square feet*
Cost: *$60 million*
Completion date: *April 2006*

Sources
Steel: *Comm Steel*
Glass-and-aluminum curtain wall: *ASI Limited; Kawneer*
Concrete: *Baker Concrete*
Elastomeric roofing: *Sarnafil*
Glazing: *Viracon; Schott*
Skylights: *LinEl*
Sports flooring: *Mondo; Connor*
Tile: *American Olean; Floor Gres*
Resilient flooring: *Johnsonite*
Light sculpture: *Custom Metalcraft*
Interior polished CMU: *Jandris*
Acoustic steel deck: *Epic Metals*

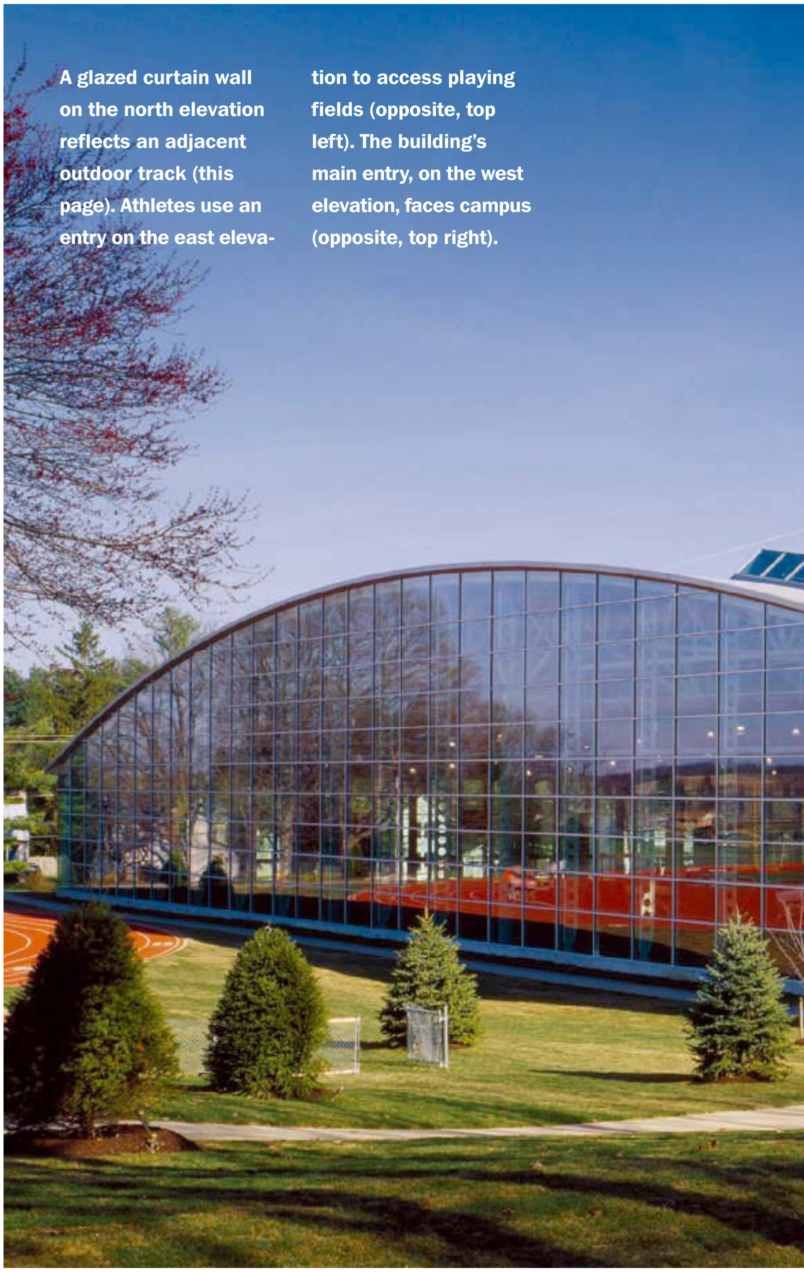
ONLINE: Rate this project and access additional sources at ***architecturalrecord.com/bts/***.

The varsity men's swim team—called the Lords—of Kenyon College, in Gambier, Ohio, has won the Division III championship for 28 consecutive years—a record unmatched by any team in the history of the National Collegiate Athletic Association. The Ladies, the women's team, also boasts an impressive history, with 21 championship wins in 24 years. But during most of their dynasty, these and Kenyon's 20 other varsity teams practiced in facilities that were far from regal: the Ernest Center, a windowless structure completed in 1980.

Kenyon, says athletics director Peter Smith, is engaged in an "arms race" against other colleges to attract top high school athletes. Architecture is a key weapon—it's equally important to members of the general student body, numbering 1,600, who want to work out or take yoga classes in an aesthetically appealing environment. With Ernst showing its two decades of heavy use, Kenyon began planning a new Athletic Center in 2001. An anonymous donation totaling $35 million allowed the college to realize everything on its wish list.

Program

People often assumed that varsity athletics dominated this building's program, admits Doug Zipp, Kenyon's associate director of athletics for facilities and operations, but the needs of intramural teams and recre-



A glazed curtain wall on the north elevation reflects an adjacent outdoor track (this page). Athletes use an entry on the east elevation to access playing fields (opposite, top left). The building's main entry, on the west elevation, faces campus (opposite, top right).

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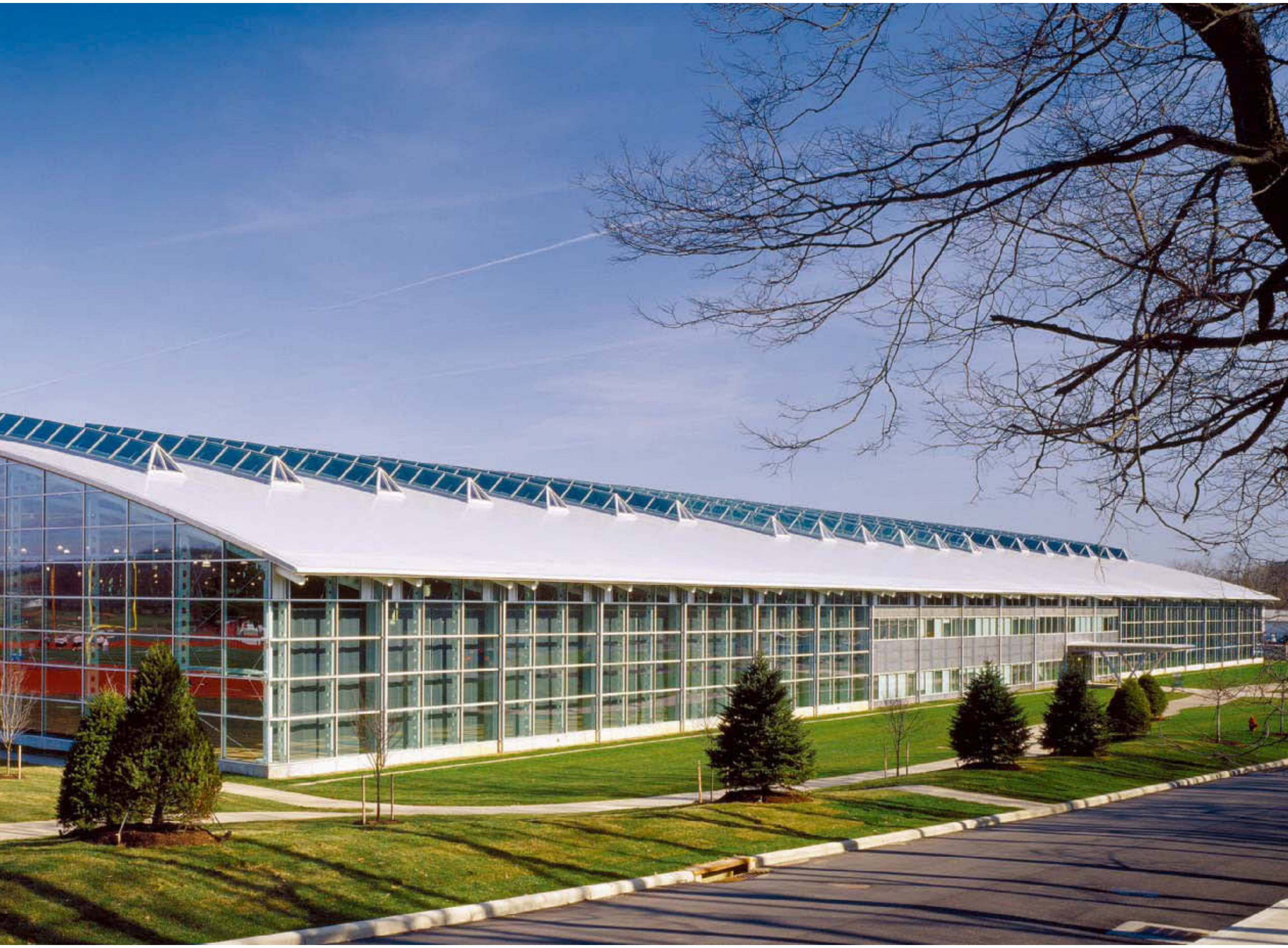
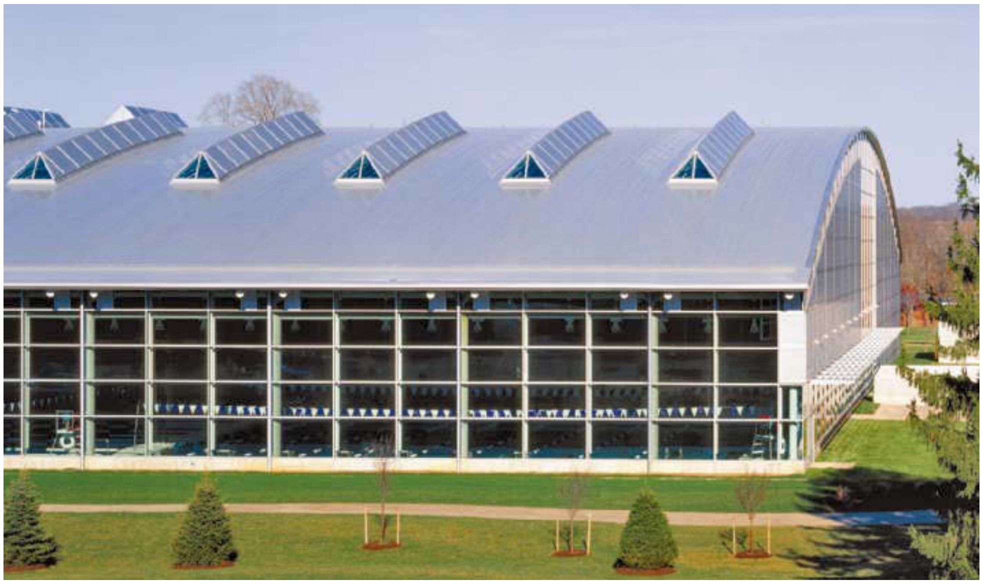
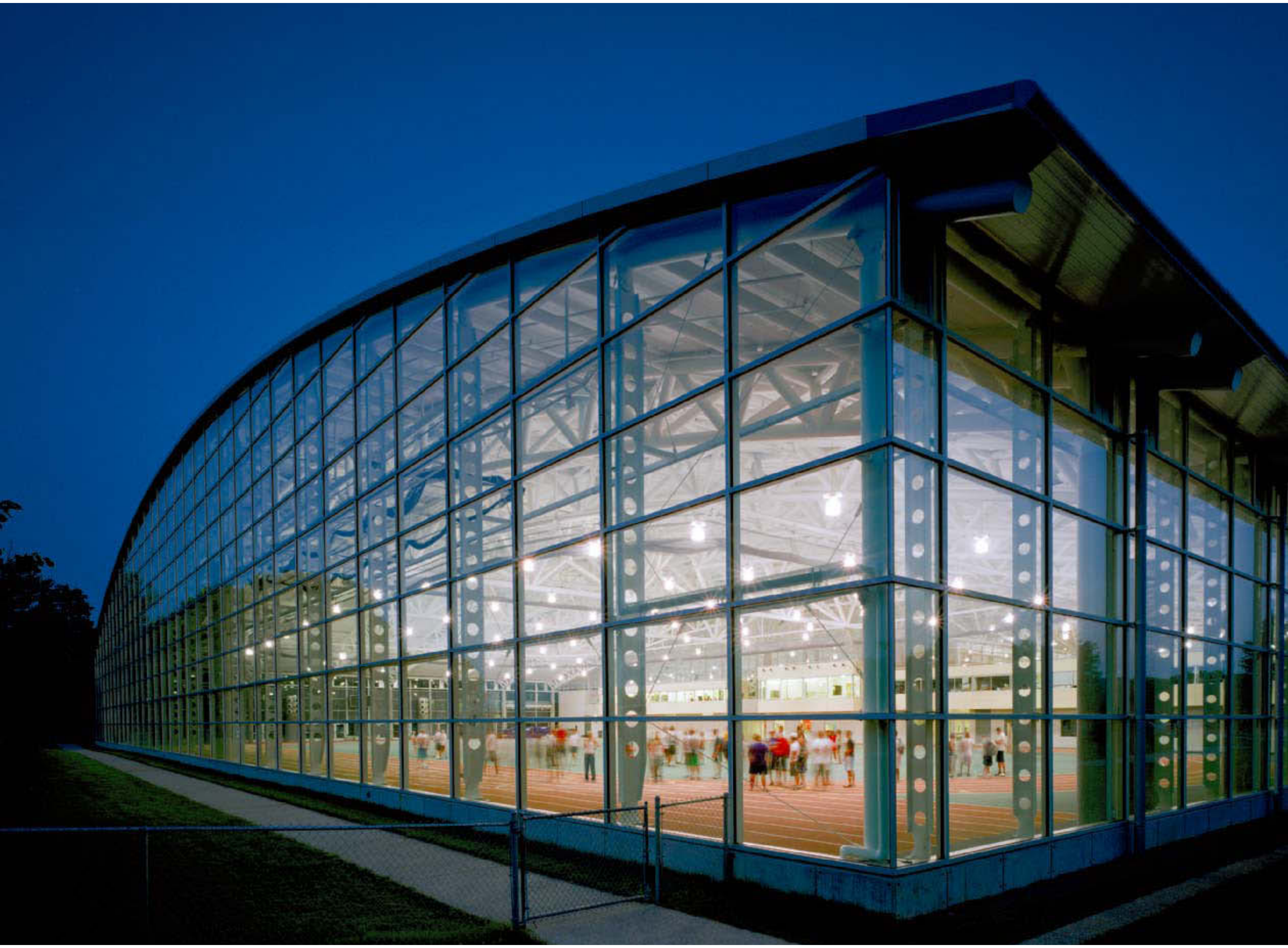




Glazing along the east elevation is clear to allow daylight into the natatorium (left), but exterior shades and internal window fins reduce glare along the south side. Glazed facades at the northeast corner (below) reveal an indoor track and second-floor offices that overlook it.

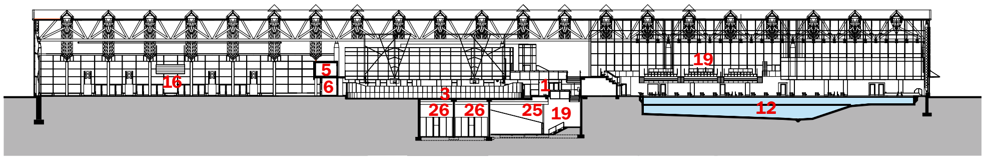


ational users were just as valued. A new natatorium was obviously on the brief, along with an indoor track for field sports and batting practice; an arena for basketball and volleyball; and courts for tennis, squash, and racquetball. But so was a court reserved solely for recreational basketball and soccer players, as well as a 12,000-square-foot weights-and-fitness room. Since the building is also intended as something of a student center for Kenyon, which lacks a facility dedicated solely to this purpose, it includes meeting rooms for academic classes and clubs, a 120-seat theater for the film society, a café—which serves sushi and smoothies—and a study lounge.

Solution

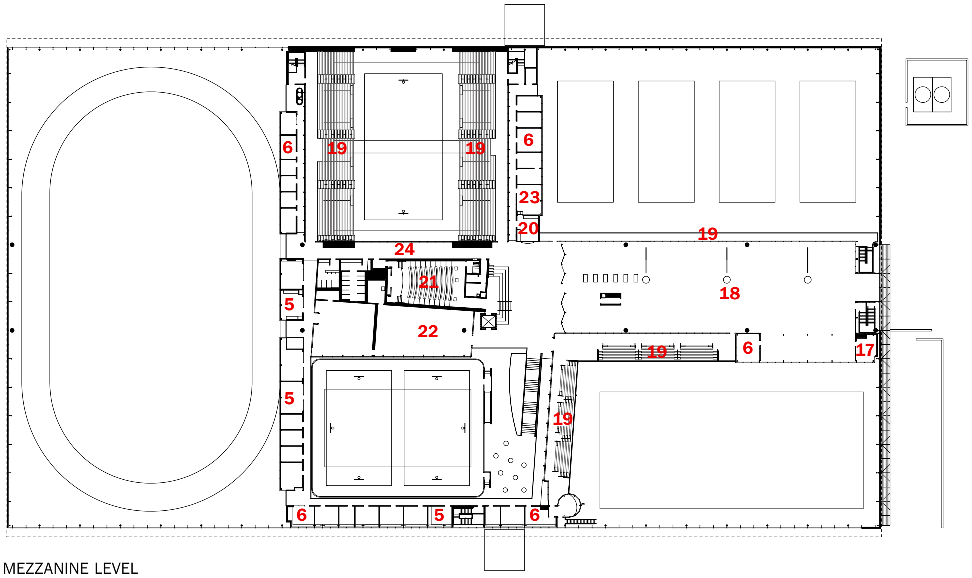
The Gund Partnership, headed by Kenyon class of ’63 alumnus Graham Gund, FAIA, has worked with the college on six buildings and a campus master plan. While the Athletic Center would seem a stylistic departure from the look of earlier projects, which complement Kenyon’s stony, neo-Gothic aesthetic, Gund says that the building clearly expresses its structure in a way that any medieval cathedral builder would understand. The design team chose to locate everything under a single, arcing roof, creating a hangarlike structure some 540 feet long and 305 feet wide. Two central rows of concrete columns support steel space trusses for the roof, while columns at the perimeter support cross members and a glass-and-aluminum curtain wall.

Transparency was Gund’s watchword. Except for a few areas along the building’s west elevation, where the varsity arena and tennis courts are located, fenestration spans most of the other three sides, enclosing a 57,000-square-foot track at the north end, and at the southeast corner, the natatorium, a pool so large it can accommodate free swim simultaneously with both varsity swim and diving practices. None of the opaque interior walls reach the ceiling, allowing views across the building’s entire length. Bands of triangular skylights follow the roof supports, daylight



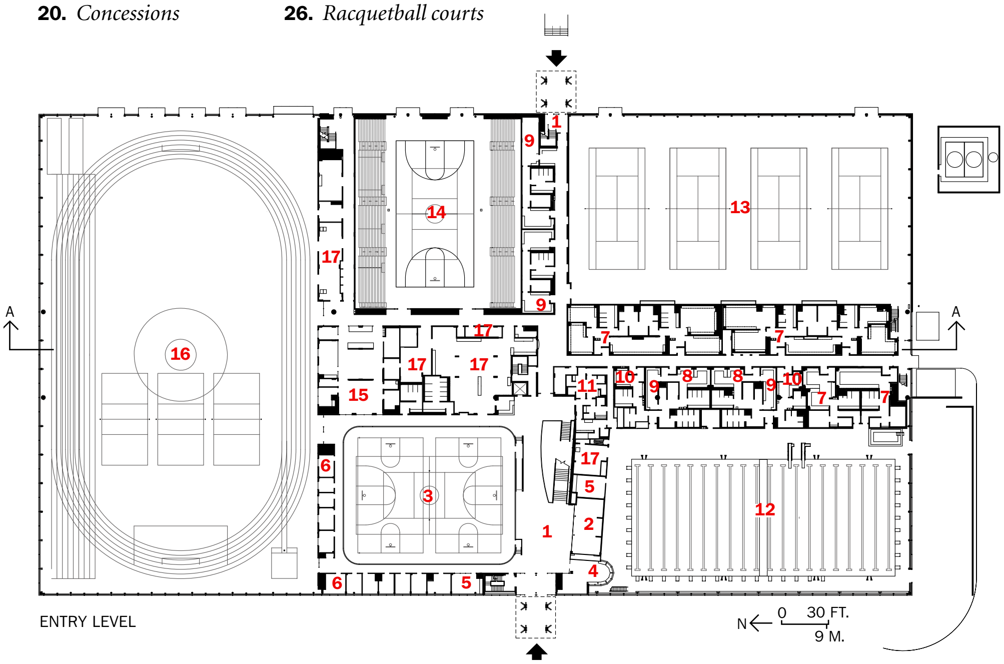
SECTION A-A

1. *Entry*
2. *Café*
3. *Multiactivity court*
4. *Study lounge*
5. *Meeting room*
6. *Office*
7. *Varsity lockers*
8. *Recreational lockers*
9. *Visiting team lockers*
10. *Faculty lockers*
11. *Coach/family lockers*
12. *Natatorium*
13. *Tennis courts*
14. *Varsity sports arena*

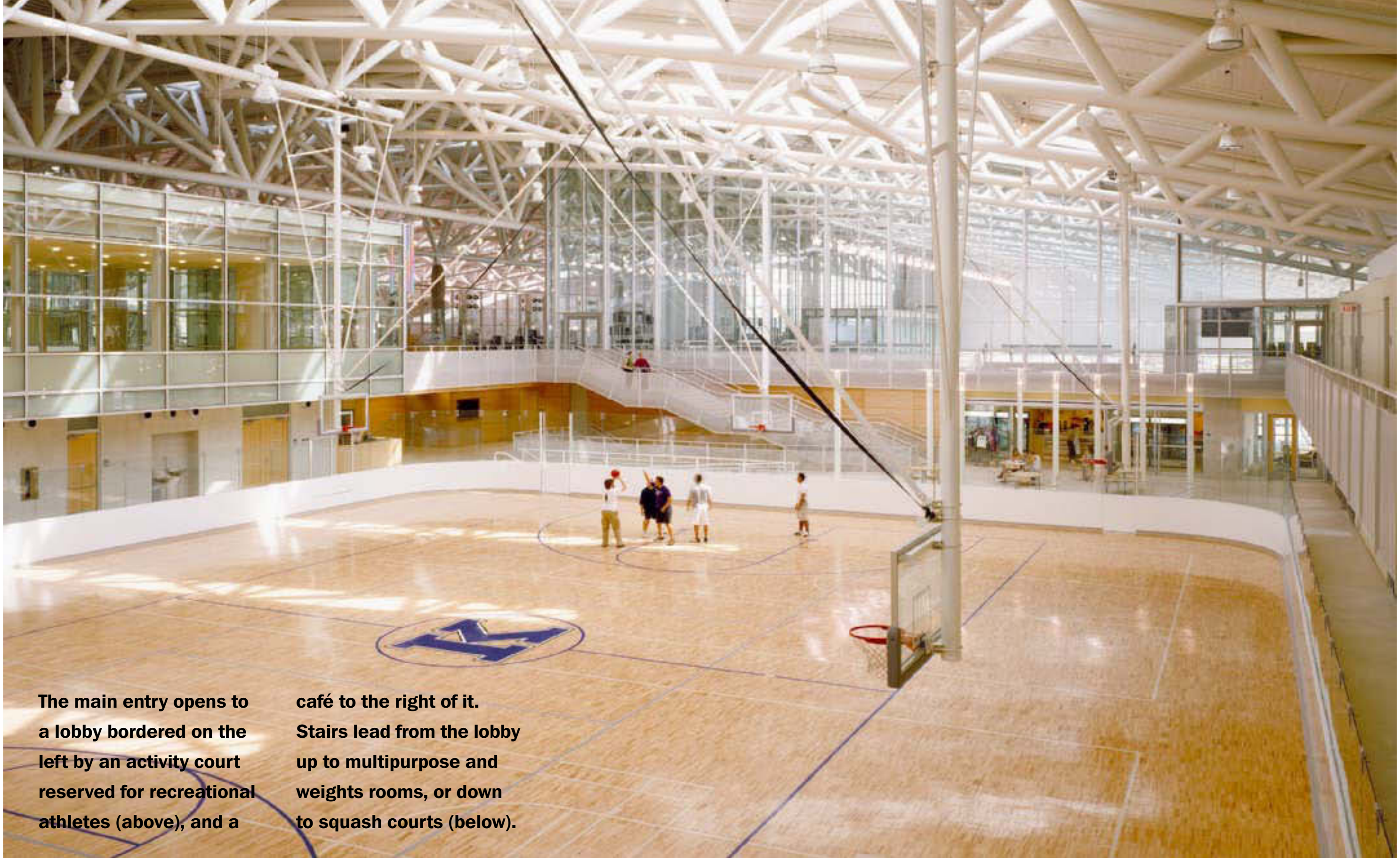


MEZZANINE LEVEL

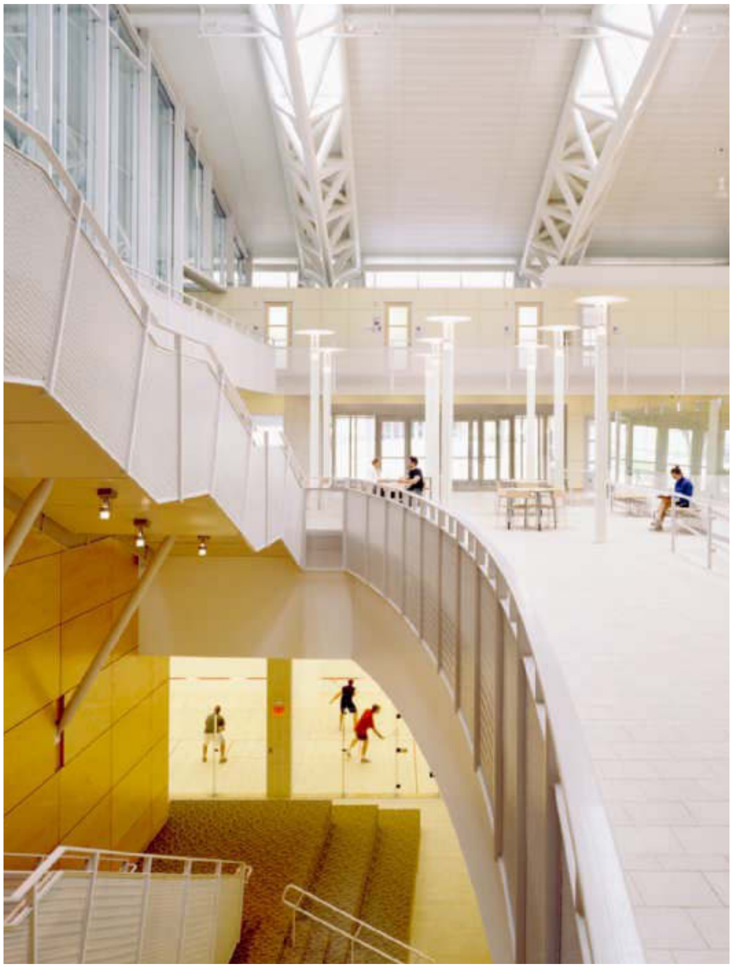
15. *Training/first aid*
16. *Indoor track*
17. *Storage*
18. *Weight room*
19. *Spectator seating*
20. *Concessions*
21. *Theater*
22. *Multipurpose room*
23. *Video editing suite*
24. *Trophy gallery*
25. *Squash courts*
26. *Racquetball courts*



ENTRY LEVEL



The main entry opens to a lobby bordered on the left by an activity court reserved for recreational athletes (above), and a café to the right of it. Stairs lead from the lobby up to multipurpose and weights rooms, or down to squash courts (below).



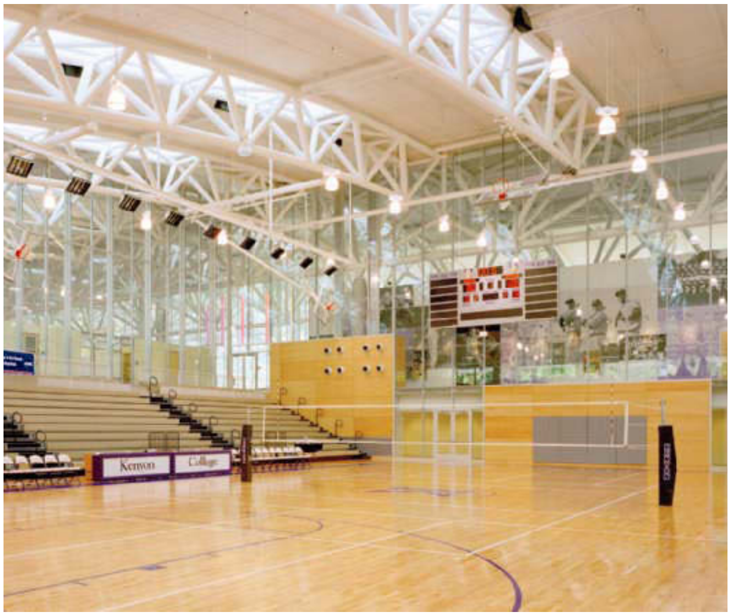
bouncing off their struts and casting intricate shadows below. Faculty offices and conference rooms are located along the building's perimeter or, on the second floor, overlooking the main sports venues.

Commentary

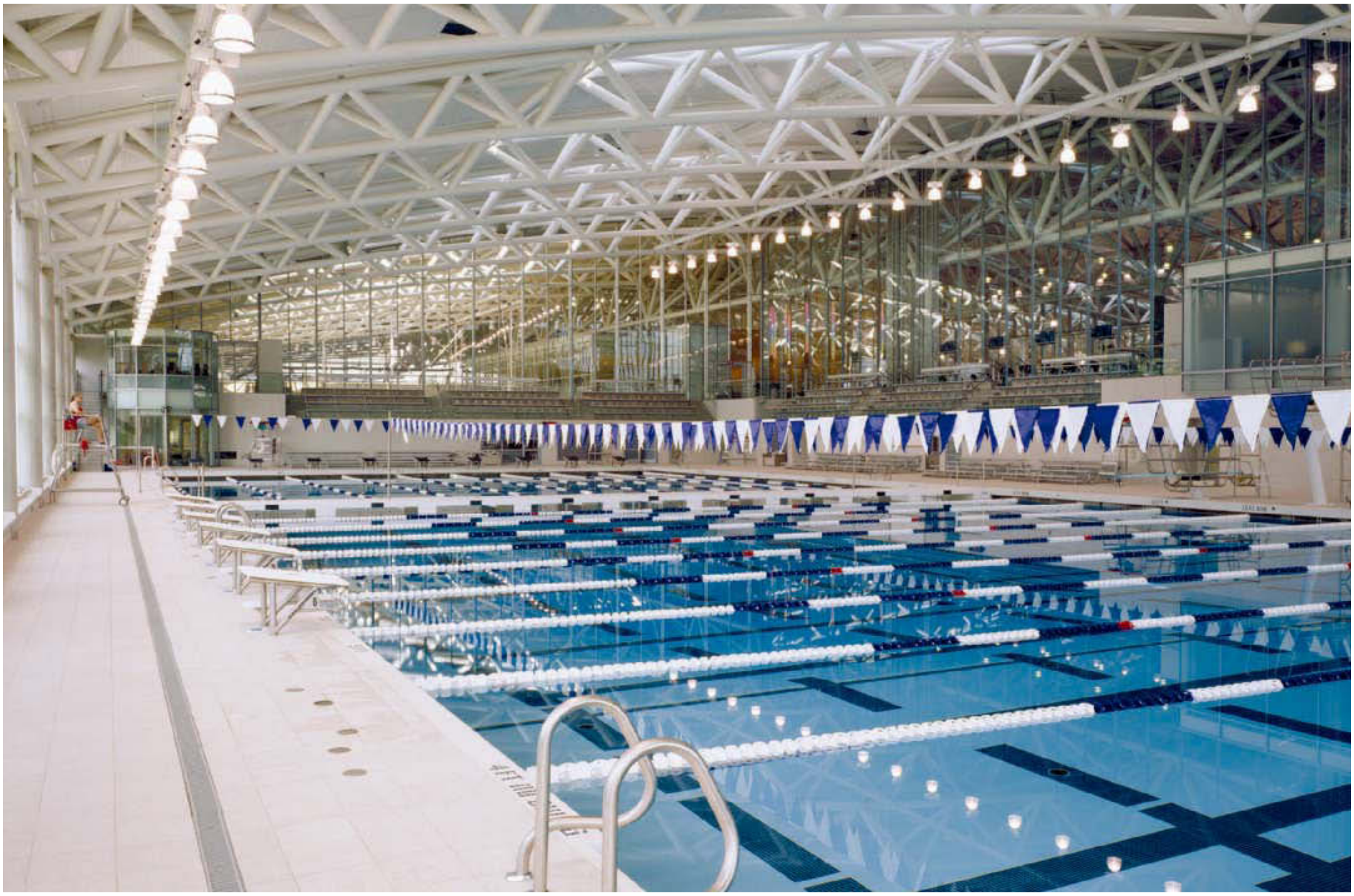
With its new Athletic Center, Kenyon gained a potent weapon in Smith's arms race: The building often helps seal the deal in wooing high school athletes, and recruiters visit a second-floor meeting room so often—because it affords excellent views of both the indoor and outdoor tracks—that it's become known as "the closing room." But the true measure of the Athletic Center's success lies in the number of nonvarsity athletes who use it. Ernst logged roughly 50 recreational users a day; the new Athletic Center averages more than 800.

From an architectural standpoint, Gund's team likewise scored big. Only the theater and a few squash courts lack access to daylight—but these spaces have little need for it. The rest of the barnlike structure embodies the meaning of open and airy, words often employed to little effect in other buildings. There are moments, particularly when standing in the indoor track, where the boundary between inside and outside dissolves—the building is that transparent. Remarkably, despite the center's high traffic as well as the preponderance of glass and tall room heights, noise barely registers thanks to an acoustic steel ceiling deck, giving the otherwise cavernous space an unexpected intimacy. It's hard to conceive of a more salubrious environment for athletics. Were Kenyon's teams less talented, the architecture would surely upstage them.

The only failing is that the college neglected to push the limits with sustainability, an important factor to the millennial generation not to be ignored in the arms race. While the Athletic Center's astonishing use of daylight, which significantly reduces the need for artificial sources, and its highly efficient underfloor HVAC system would score it several LEED points, the project provided a lost opportunity to pursue more intensive features, such as geothermal wells and photovoltaic panels. ■



Glazed panels along the east wall of the varsity sports arena provide views of a trophy gallery (above). The building's load-bearing concrete columns and steel trusses define a weight room located at the top of the main stair on the second level (above right); along its east edge, this room overlooks the natatorium (below).



Two: STUDENT CENTER EXPANSION

La Jolla, California

Public Architecture and Planning unifies and freshens UCSD's original cluster of activity buildings with a new walkway and outdoor rooms.

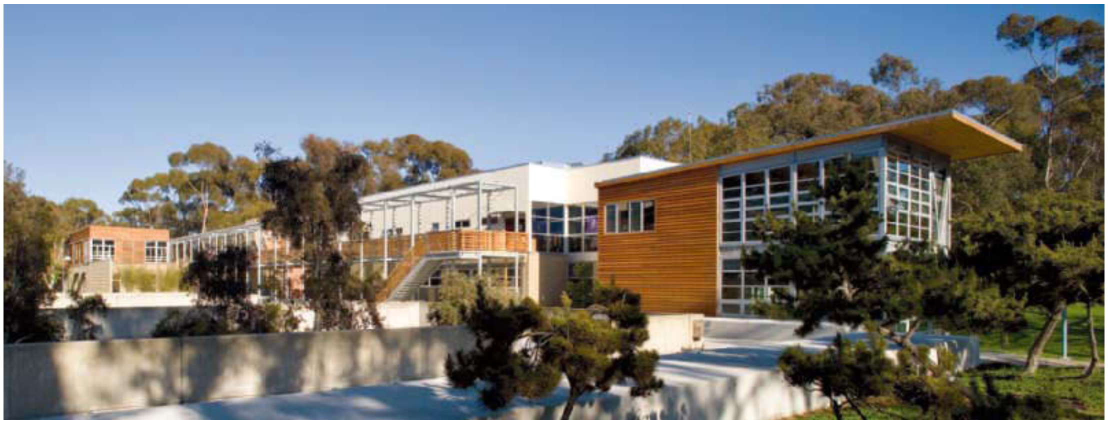
By Ann Jarmusch

Architect: *Public Architecture and Planning—James Gates, James Brown, principal architects; Francisco Garcia, project manager; Marco Sette, Michael P. Paluso, Steven Rosenstein, Jonathon Stevens, Alfred Wilson*
Client: *University of California, San Diego*
Consultants: *Envision Engineering (structural); Snypes-Dye Associates (civil); Michael Wall Engineers (electrical); DEC Engineers (m/p); Spurlock Poirer (landscape)*
General contractor: *Straub Construction*

Size: *15,000 square feet (Phase I); 21,000 square feet renovated, 3,500 new construction (Phase II)*
Cost: *$10 million*
Completion date: *June 2006 (Phase I); October 2007 (Phase II)*

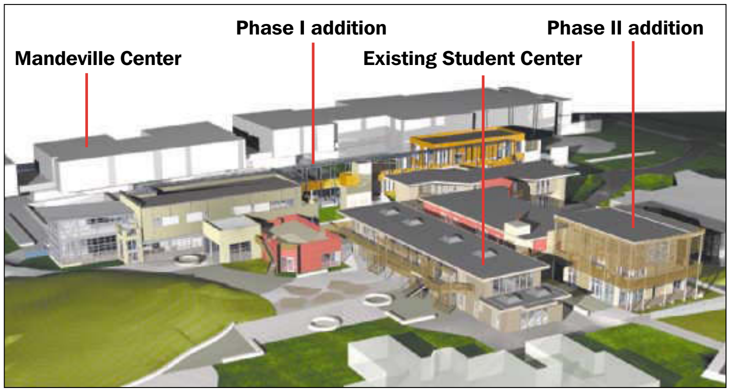
Sources
Masonry: *Honed CMU by RCP Block*
Wood: *Redwood; resawn Douglas Fir Plywood*
Windows: *Columbia Windows*
Entrances: *Southwest Aluminum*
Sliding doors: *Fleetwood*
Paints and stains: *Sherwin Williams*
Resilient flooring: *Armstrong VCT*
Carpet: *Lees Carpet*
Lighting: *Lithonia & Scott; Gotham; Artimide; Calnet; Leviton*

ONLINE: Rate this project and access additional sources at **architecturalrecord.com/bts/**.



Some 300,000 eucalyptus trees planted in 1910 failed to produce the timber profits that boosters envisioned, but 50 years later, the effort's legacy proved to be a grander public good. The fledgling University of California, San Diego (UCSD) opened in the 1960s amid the towering eucalyptus, which offered shade and ambience to an arid mesa near the Pacific Ocean. The Student Center—a half-dozen two-story, wood-frame buildings dating to 1976—stands in one of the fragrant groves. This "village" has evolved into a colony for student organizations and their enterprises, including a food co-op, bookstore, and newspapers. But as the number of groups mushroomed over time, the village grew makeshift outposts. Students intervened in 2003, when they passed a referendum to raise their fees to fund expansions of this center and a larger one, called the Price Center, which opened in 1989.

Ann Jarmusch is architecture critic for The San Diego Union-Tribune.



Program

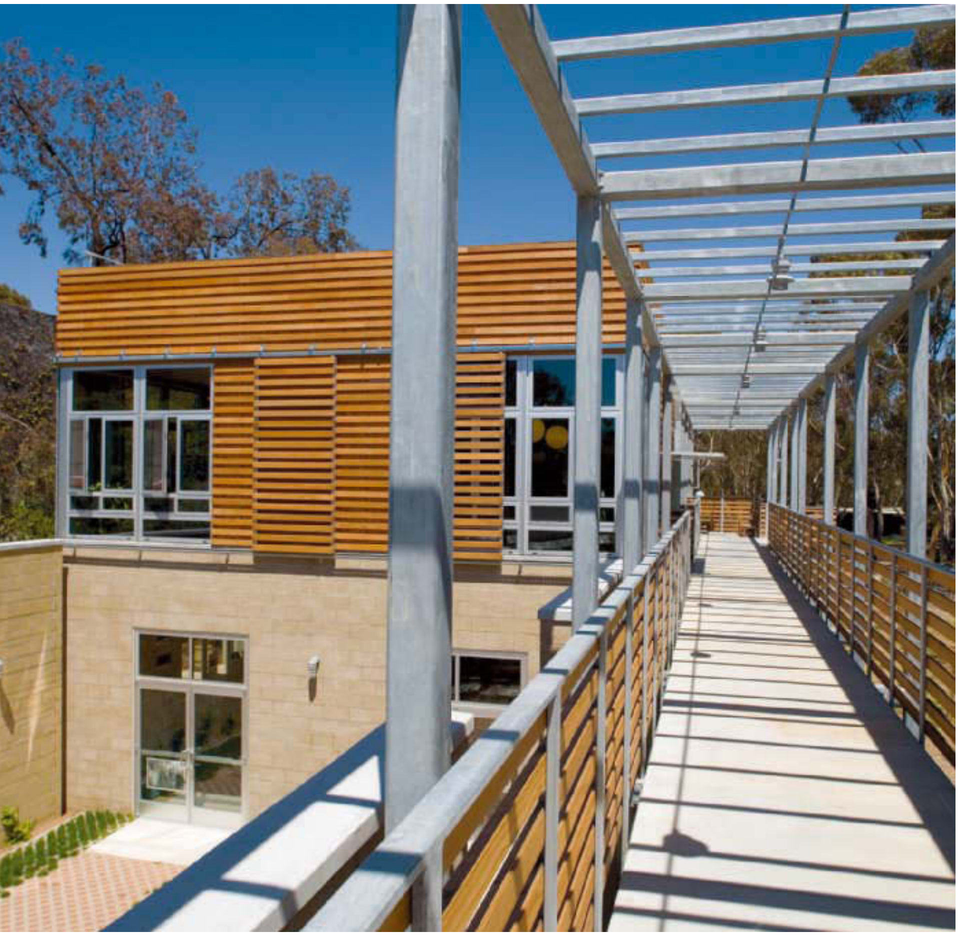
Although it was supplanted by the Price Center, the original, 20,000-square-foot Student Center remains popular among students and has become an icon for campus social and political activism. UCSD hired the locally based firm Public Architecture and Planning to renovate and nearly double the old center's size without detracting from its character or setting, which James Brown, AIA, principal and cofounder of Public, describes as "the immense, quiet power of the grove."

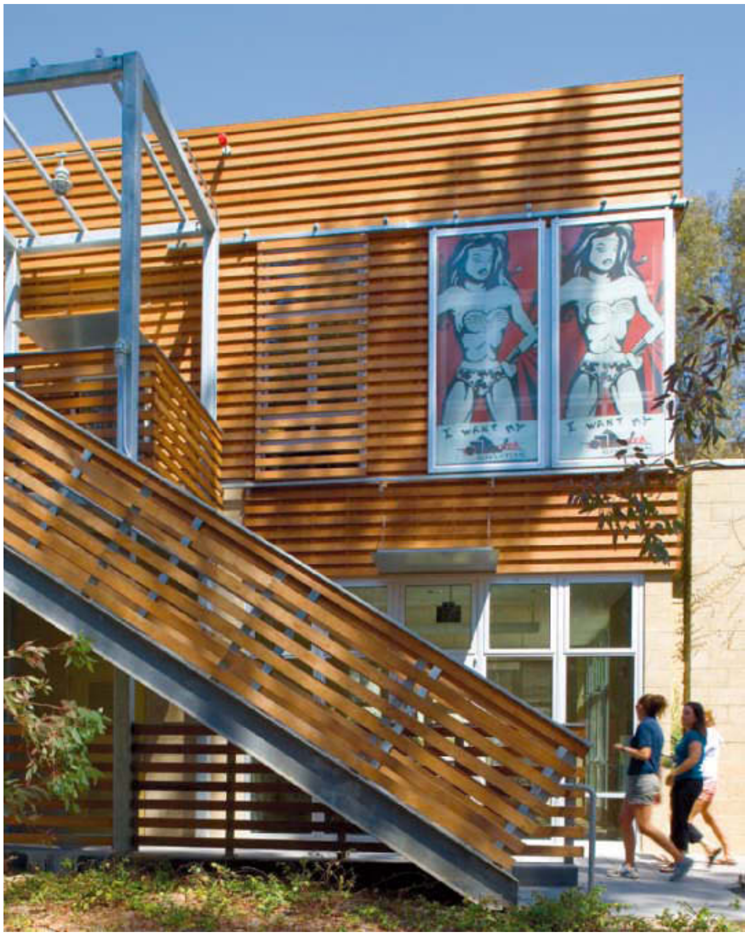
The 2003 referendum specified perpetual uses and designated space. Brown also met individually with 30 student groups, staff, and campus

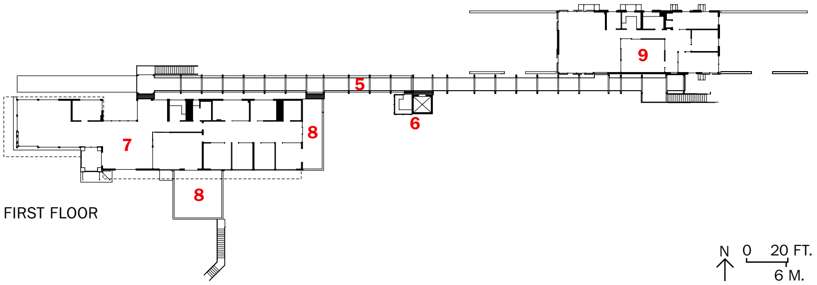
PHOTOGRAPHY: © DAVID HEWITT ANNE GARRISON

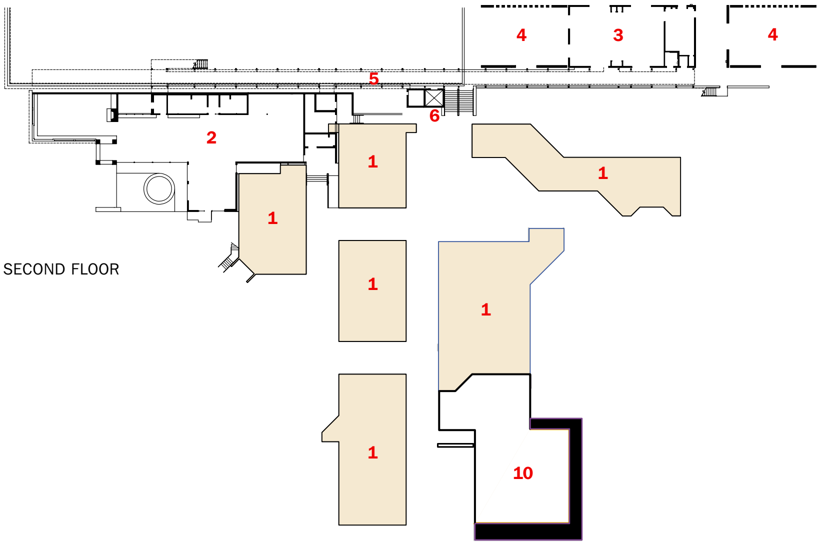
Along the Student Center's north elevation (opposite), a terrace dubbed an "outdoor room" connects to a plaza between the building and the Mandeville Center. A lounge and café volume, at the west end of the building, faces south toward a grassy hill (right).

A second-floor walkway along the north elevation links the west wing (below), containing the café and lounge, to the east wing.









The LGBT Resource Center, at the east end of the walkway (above left), overlooks an "outdoor room" below it. Wood slats and graphic panels shade the center's south-facing windows (above right).

1. *Existing Student Center*
2. *Café and lounge*
3. *Meeting room*
4. *Outdoor room*
5. *Walkway*
6. *Elevator*
7. *Women's Center*
8. *Deck*
9. *LGBT Resource Center*
10. *Study lounge*

committees and distilled their updated needs and ideas for the predetermined mix: the Women's Center; the Lesbian, Gay, Bisexual and Transgender (LGBT) Resource Center; meeting rooms; lounges; and dining areas. Public worked in two phases, the first devoted to 13,600 square feet of new construction, the second to renovating the existing center and appending a tree-houselike study lounge, encompassing 3,500 square feet, to the building's southeast wing.

Solution

To the north of the complex stands Mandeville Center, a monumental, 1975-vintage arts building designed by Los Angeles Modernist A. Quincy Jones. "It's so close and so wonderful that we had to respond to it," Brown says of the wood-and-concrete cultural hub, which is laced with practice studios, patios, and walkways.

Public designed a new, two-level building that would, as Brown says, "mediate" between Mandeville and the Student Center. This solution also

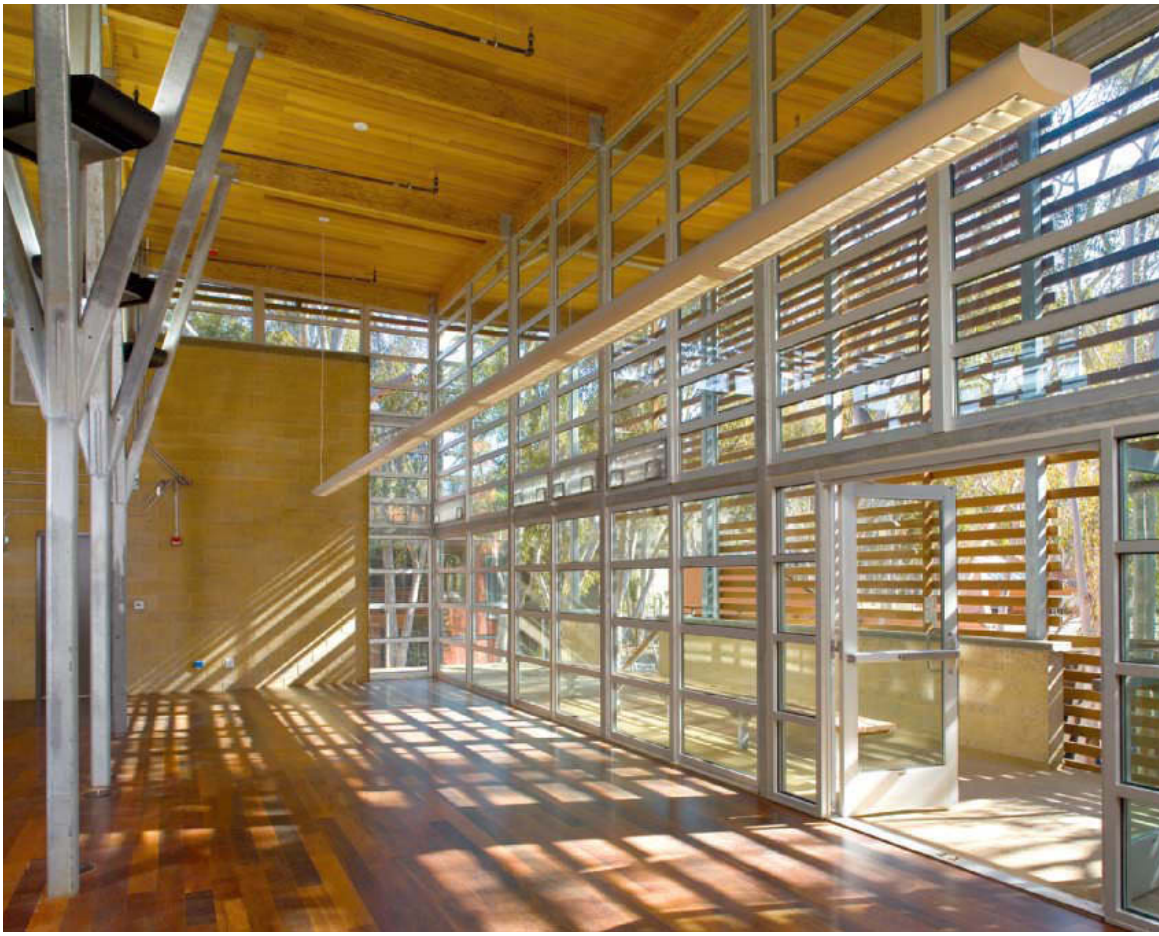
A study lounge was added to the southeast tip of the Student Center (right). A lounge also occupies the building's northwest corner (below).

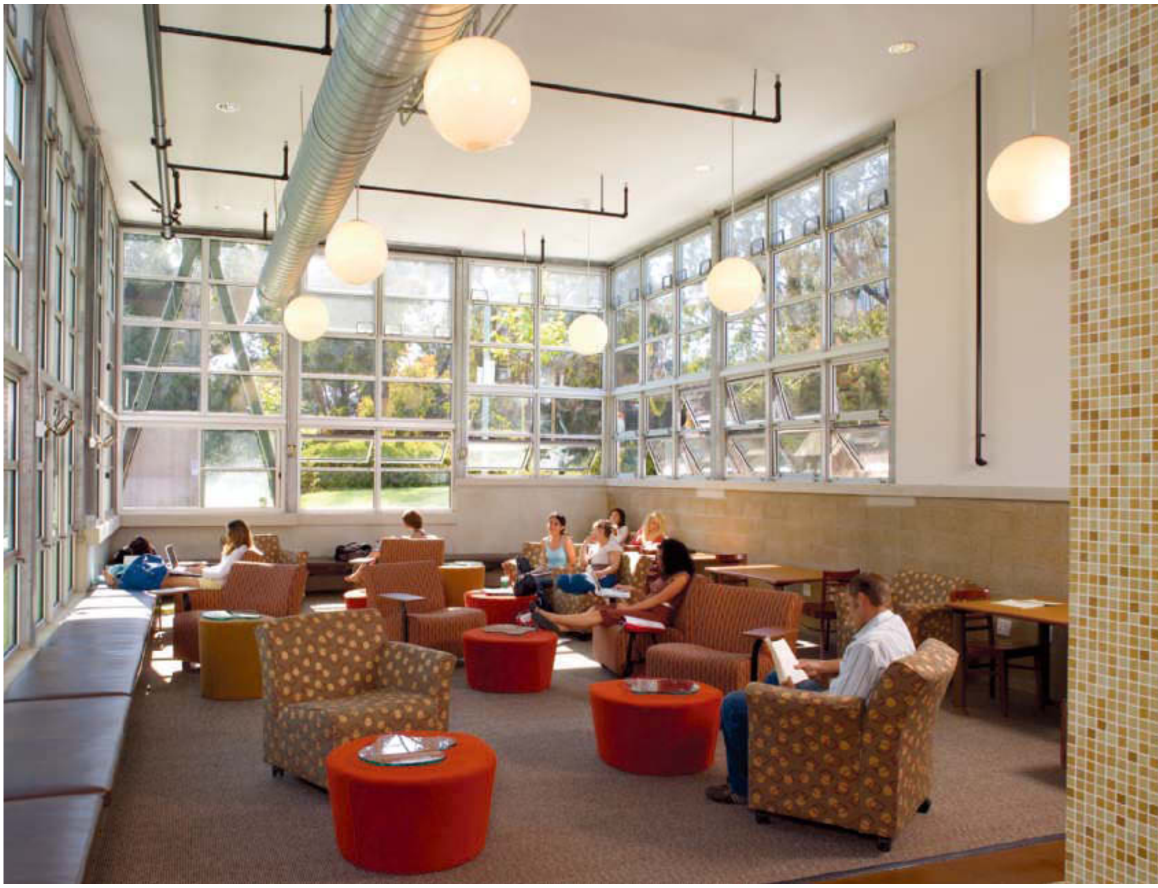
grew out of interviews with members of the Women's and the LGBT centers, which collaborate on projects and asked to be neighbors. The architect inserted a long, narrow building between Mandeville and the student complex, to the south. Built of masonry block, widely spaced wood-clapboard siding, and lots of glass, this structure is markedly more open and airy than the older buildings it complements. On the upper level, a 260-foot-long catwalk that runs parallel to the building links the Women's and LGBT centers. The catwalk shades a twin, ground-level walkway, which leads to flexible, glass-enclosed meeting rooms, lounges, and dining areas. Each of the two meeting rooms opens onto a walled courtyard designed by artist Robert Irwin. These outdoor "rooms" provide refuge or can expand the adjacent meeting space. Each features a single wood bench set against ivy-covered masonry walls and stands of bamboo.

On the south end of the refurbished Student Center, above an existing student store, Public added a glass-enclosed study lounge that Brown calls "a platform in the trees." The addition and its 10-foot-wide, wraparound wood deck are protected by a box-shaped wood shade structure with irregularly spaced slats to admit air, sunlight, and views.

Commentary

Public deftly inserted a new building into a cramped, high-traffic area and captured additional space by using Mandeville Center's long, massive concrete plinth to support a new walkway. This walkway is integral to improved circulation among Student Center buildings and provides a much-needed link to other campus destinations. Unlike some of the older buildings, new rooms easily and dramatically open to the outdoors and connect with the landscape. Perhaps most remarkably, Public managed to bring cohesiveness and richness to a previously confusing area. ■





Three: TANGEMAN UNIVERSITY CENTER

Cincinnati, Ohio

Gwathmey Siegel renovates a student union, mediating between old and new campus buildings outside and offering surprises inside.

By Jayne Merkel

Architect: *Gwathmey Siegel & Associates Architects—Charles Gwathmey, FAIA, principal; Robert Siegel, FAIA, principal; Thomas Levering, AIA, associate partner; Gregory Karn, senior associate*
Architect of record: *GBBN Architects—Joseph T. Schwab, AIA, Ted Christian, AIA*
Client: *University of Cincinnati*
Consultants: *Fosdick and Hilmer Consulting Engineers (m/e/p); THP Limited (structural); Hargreaves Associates (landscape); Hillmann DiBernardo Leiter & Castelli (lighting); David Harvey Associates (acoustical)*
General contractor: *Reece-Campbell*

Size: *180,000 square feet*
Cost: *$38 million*
Completion date: *February 2003 (south wing); April 2004 (north wing)*

Sources
Zinc paneling: *VM Zinc*
Built-up roofing: *Carlisle SynTec; Johns Manville; Atlas Roofing; Super Sky Products*
Windows: *EFCO; Graham Architectural Products; Timrek & Associates*
Doors: *Norwood Hardware & Supply; Ceco Door; Overhead Door; Chase Doors; Timrek & Associates*
Cafeteria furniture: *Allemuir; Sandler; Falcon; Landscape Forms; Epic*

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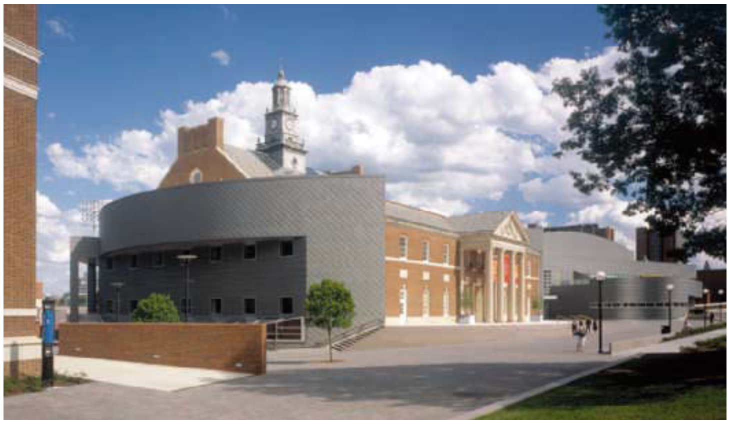
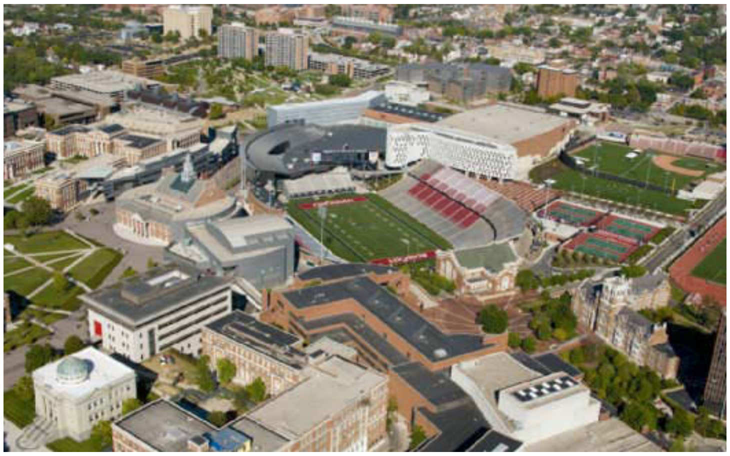
The Tangeman University Center, a Modern, light-filled student center with a Federal Style facade, represents a change in direction for the University of Cincinnati's Signature Architecture program. In 1989, the school began bringing in high-profile architects to energize a hilly, 137-acre campus that, over time, had become disorganized and dominated by automobiles. The first new buildings—by Peter Eisenman, Michael Graves, and Henry N. Cobb—created distinct academic precincts. Then, as a campus plan by Hargreaves Associates was implemented, the emphasis shifted to coordination, linkages, and the creation of a "quality of campus life" that the university had lacked. The Janus-faced center creates a transition—both physically and stylistically—between a campus green surrounded by old Classical-style brick classroom buildings and bold new recreational facilities by Moore Ruble Yudell, Morphosis, and Bernard Tschumi.





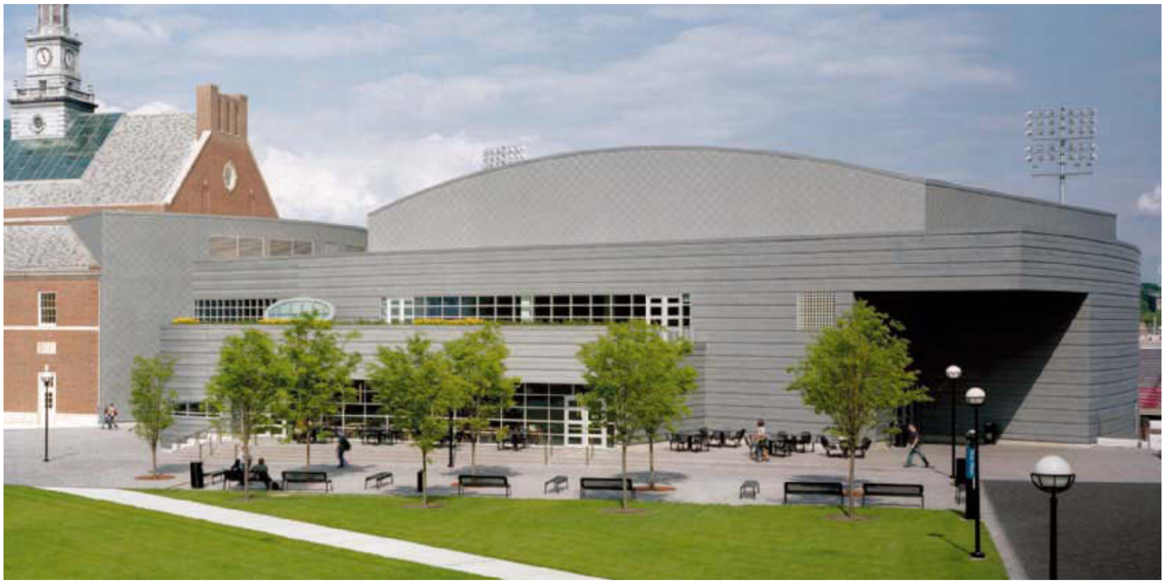
PHOTOGRAPHY: © BRAD FEINKNOPF, EXCEPT AS NOTED; DOTTIE STOVER/UNIVERSITY OF CINCINNATI (BOTTOM)

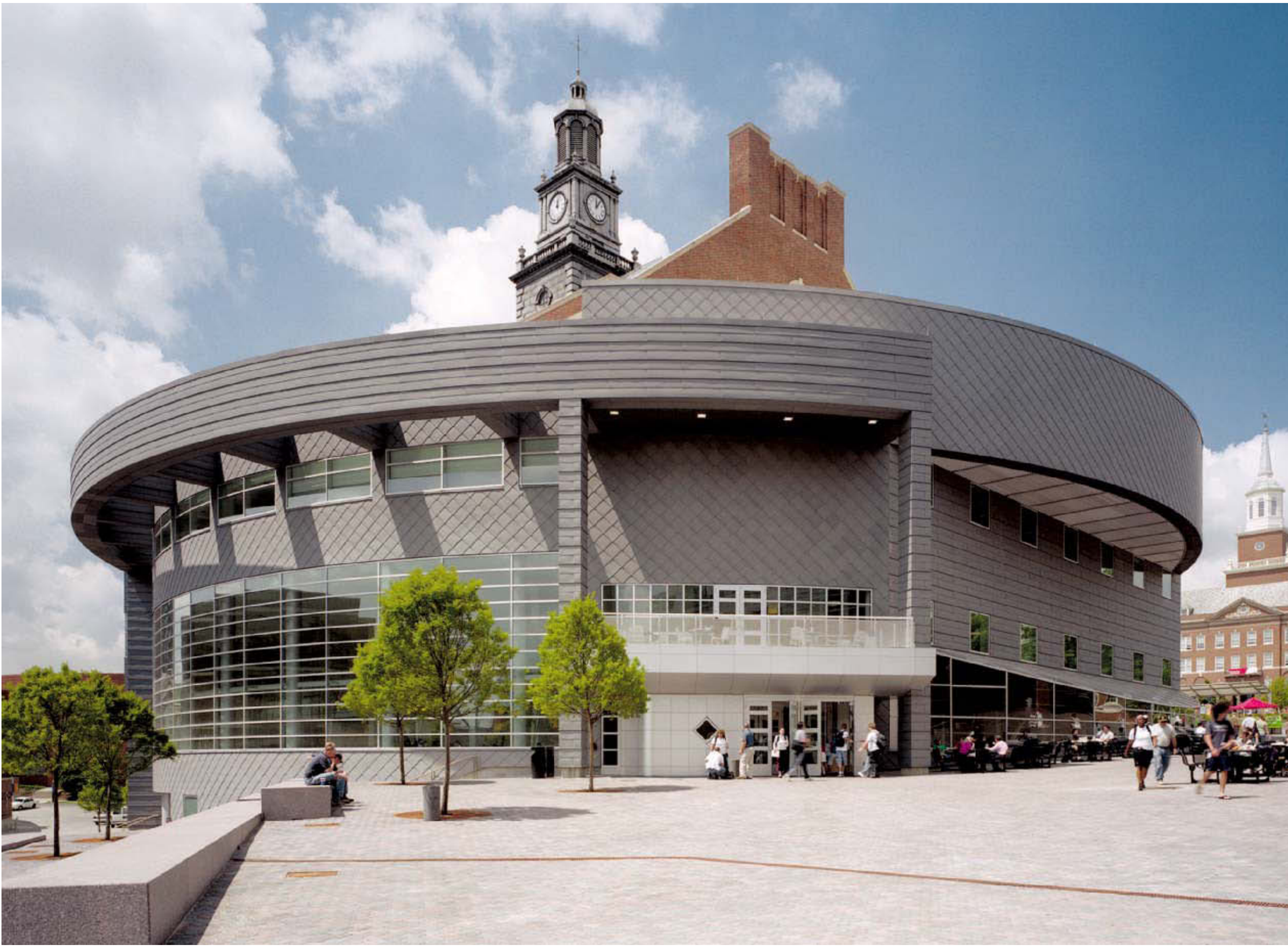
Program

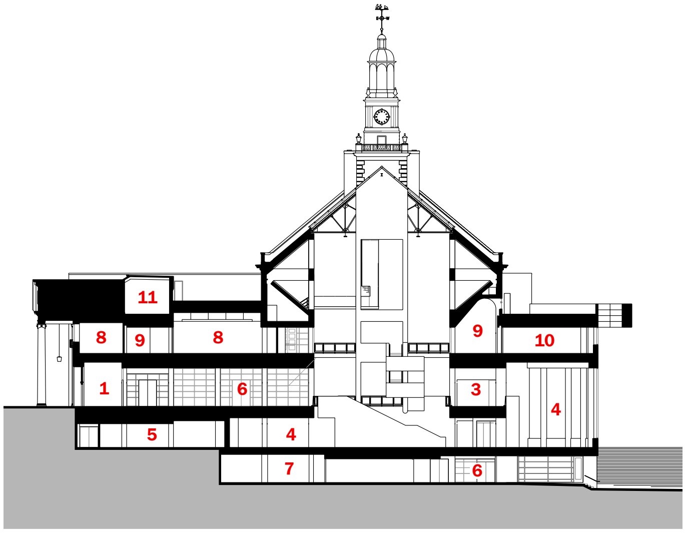
Gwathmey Siegel was asked to renovate and enlarge a redbrick, colonnaded student union. Designed by Hake & Hake in 1935, it features a tower based on Philadelphia's Independence Hall. The building occupies a sloping site between a historic academic quadrangle and a football stadium built in 1912 on lower ground in what is now the middle of campus. The school wanted the architect to maintain a continuity of image with the existing campus, bring natural light into the interiors, and expand the number and size of facilities. It aimed to preserve an 800-seat, multipurpose hall, restaurant, and game room, while adding facilities for food service, a campus bookstore, a 200-seat movie theater, convenience store, credit union, conference rooms, and student lounges. The program also called for connections to a new visitors center, student services building, and Hargreaves's "MainStreet" corridor, which links academic areas and recreational facilities in an attempt to create a lively center of student activity.

Jayne Merkel is a contributing editor of RECORD.

Gwathmey Siegel transformed a masonry-clad, 1930s student union by surrounding it with two wings clad in zinc panels typically used as roofing (opposite, top). With its central location on campus (opposite, bottom), the building (this page) acts as an aesthetic bridge between older, traditional structures to the west and new architecture to the east.



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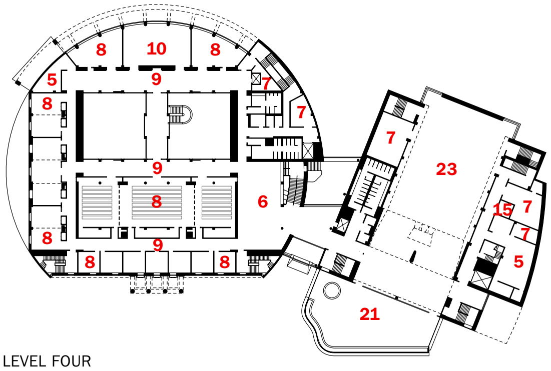
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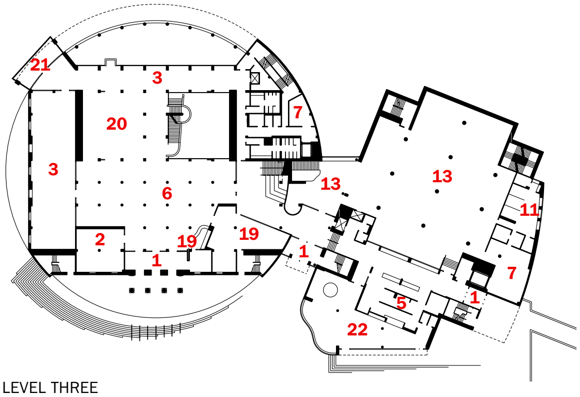
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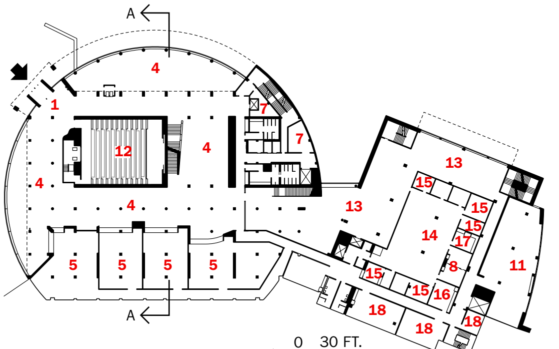
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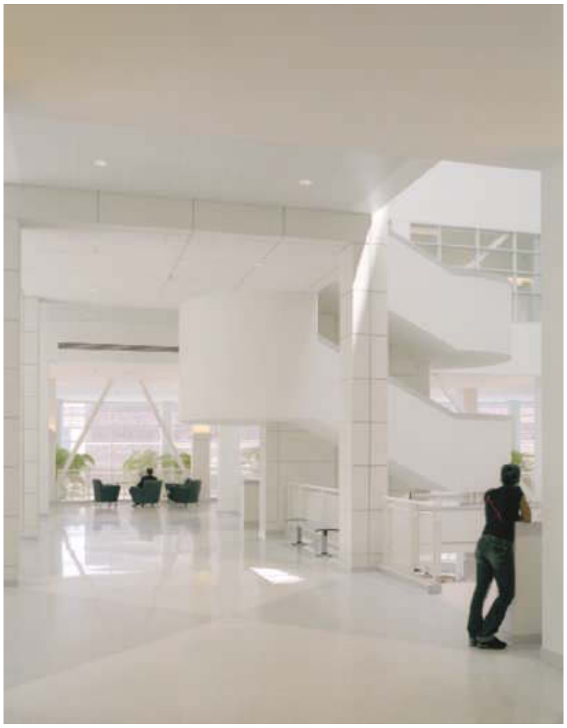
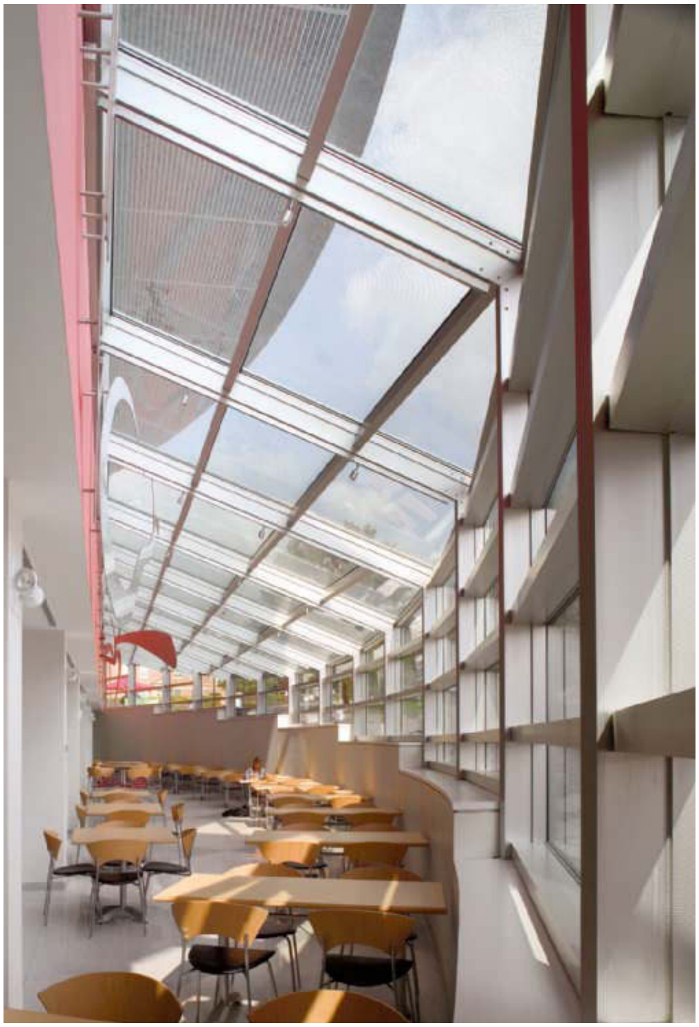
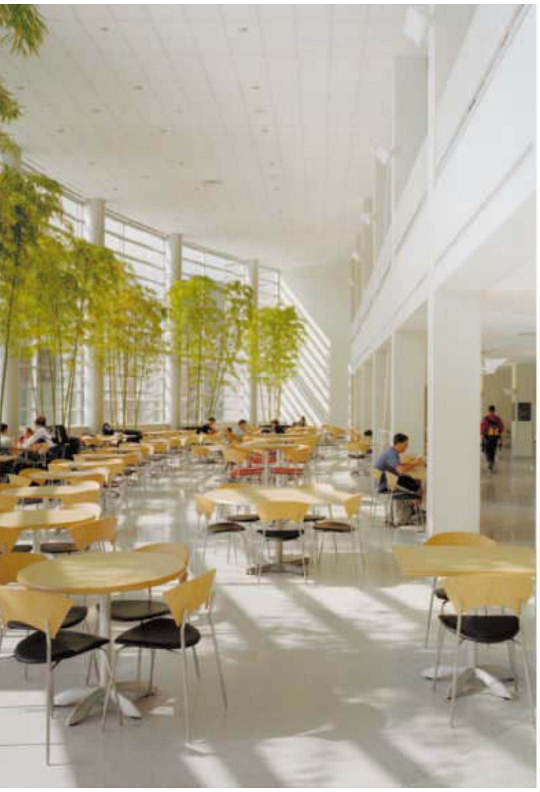
LEVEL TWO

1. *Entry*
2. *Retail*
3. *Lounge*
4. *Food court*
5. *Kitchen*
6. *Lobby*
7. *Storage*
8. *Meeting room*
9. *Corridor*
10. *Student senate*
11. *Mechanical*
12. *Theater*
13. *Bookstore*
14. *Workstations*
15. *Computer room*
16. *Pantry*
17. *Copy room*
18. *Maintenance*
19. *Information desk*
20. *Atrium*
21. *Terrace*
22. *Dining room*
23. *Great hall*



At the heart of the old student union building, Gwathmey Siegel cut through concrete floors, laid bare the steel structure, and inserted skylights into the roof to create an open atrium flooded by daylight. The architect also uncovered a stair that leads to a rooftop bell tower (opposite). A walkway bisects the atrium on level three (above), while clerestory windows light a corridor leading to meeting rooms on level four (top).





Seating for a food court surrounds both the north (above) and east (left) sides of an entry located at grade on Tangeman's second level. The food court overlooks buildings constructed during the last decade as part of the university's Signature Architecture program. The Great Hall on the fourth level of Tangeman's south wing features large windows that face southeast toward a sports stadium (right).

Solution

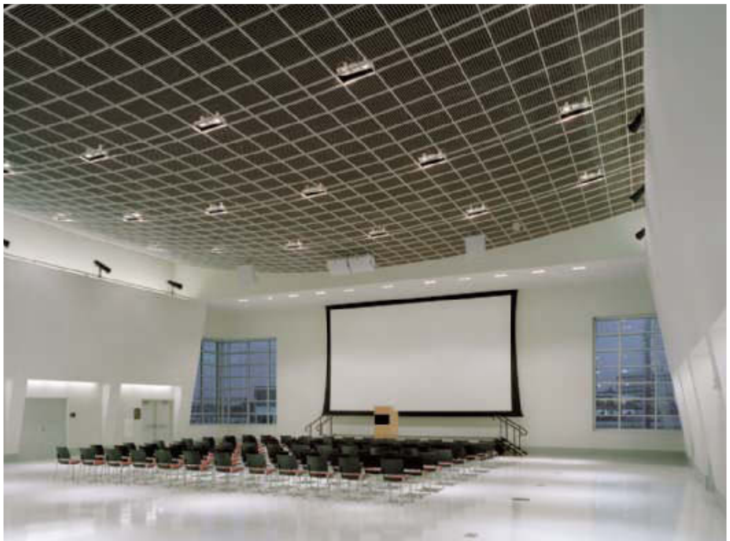
Charles Gwathmey and Gregory Karn, working with GBBN of Cincinnati, turned the University Center into an institutional version of the kind of house that people often describe as "Queen Anne front, Mary Ann behind." They preserved its Federal Style facade but sheathed its large-scale, drum-shaped rear elevation in black zinc paneling and glass. Inside, they cut through the floors, stripped the central area down to its steel columns and beams and concrete slabs, and replaced traditional rooms and intimate lounges with a three-story, skylit atrium that serves as the building's central circulation core. They preserved the original shed roof and its distinctive cupola but replaced much of the roofing with glass, so the rotunda is now flooded with natural light. This dramatic space encompasses an amphitheater overlooking athletic fields and a 600-seat food court; a game room on the lowest level opens to the newly created Stadium Plaza. A south wing houses a new multipurpose Great Hall that accommodates 1,000 people, the central campus kitchen, a restaurant, and the campus bookstore on an interior corridor leading to the visitors center in Leers Weinzapfel's University Pavilion.

Commentary

As a work of urban design, the Tangeman University Center succeeds superbly, anchoring the McMicken Commons campus green east of its traditional facade, opening to the athletic complexes behind and below it, and forming lively interior connections to the visitors center on the south. On the north, Tangeman Center frames the new indoor/outdoor "MainStreet" corridor with Moore Ruble Yudell's Steger Student Life Center, which has a zinc-faced, arc-shaped south end that echoes Tangeman's rear facade.

The relationship between the inside and outside of the building, however, is jarring. The dignified old brick entrance no longer leads to wood-paneled rooms with leather sofas and scenic murals where generations of students and faculty gathered in the past. Instead, it opens into a bright, white-walled, 90-foot-tall rotunda with a food court that resembles an upscale shopping mall. The bookstore, convenience store, and other necessary services are located in a hallway that also feels more like a commercial space than an academic one.

Although it has only been a state school for 30 years, the University of Cincinnati was chartered as a public municipal university in 1870 and has roots dating to 1819. There is now little sense of this history left in the building since the new elements dominate, although you can glimpse the old cupola from the atrium. More dynamic push-pull between old and new spaces like that would have been a lot more interesting and would have given the Tangeman University Center a unique sense of place, instead of one that feels as if it could be on a well-designed new suburban campus or commercial strip anywhere in America. ■



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Moore ON RECYCLING

CHANGES What you have to keep in mind is that getting rid of waste material is a big expense. The demolition industry is a lot more sophisticated than it used to be. There's new equipment. Government regulations are tighter...and harder to comply with. We've become more involved in recycling than ever before.

Bill Moore, Vice President, Brandenburg Industrial Service Co., Chicago, one of the largest demolition companies in the U.S. President, National Demolition Association. Degree in Safety, Indiana State University. Spent a decade in insurance and safety specializing in the construction of high-rise buildings, another in demolition safety, and another in marketing for Brandenburg.

PROCESS First thing we do is gut the interior of a building as much as possible and do whatever handwork is needed. We remove all the hazardous materials – mercury bulbs, asbestos, that sort of thing. And if there's office furniture or architectural artifacts, et cetera, left in the building, we'll pull them out and re-sell that too. Then we'll tear out the drywall, glass and wood – basically strip the building down to its structure. Once we're ready to wreck, we use a crane to drop a big machine on the roof to hammer out the concrete floor by floor, crushing it, until we're at ground level.

REALITY We don't necessarily recycle for good "green press" – it's economics pure and simple. Anything we can salvage out of a building, we'll do it because there's a market for it. The more we recycle, the more we salvage and less we landfill, the more competitive we can be for our customers.

DELICATE Brandenburg does much more than complete demolition. One job we did – the Rookery building at the corner of Adams and LaSalle – is the oldest high-rise building in downtown Chicago. It's a landmark, more than 100 years old. So the owner decided that rather than tearing the building down, it should be completely gutted to make way for a modern interior. So we do work like that too.

COSTS If we go to a landfill with a load of concrete, it's going to cost three or four hundred dollars here in Chicago – and probably double that on the East Coast. Landfilling concrete is expensive, so we're always trying to find different things to do with it. We'll crush it, use it to fill basements, try to find other jobs that need fill – we even have portable crushers to make it into CA6-type material for road beds and parking lot bases. Anything to get rid of it.

WORTH Concrete, basically, has no value. Even when we recycle it, we still have the expense of crushing it, which is about 10 to 50 dollars a truckload. While that saves us from having to go to the dump with it, it doesn't have a positive value. You'll never break even. Steel, on the other hand, has always been valuable. And like other commodities, the price varies quite a bit – right now, we're in a very good position when we sell steel.

SHIPPING Let me explain something about the transportation of material. You have a tractor trailer and it weighs about 40,000 pounds. Well, the legal load limit on most highways is 80,000 pounds. So you're going to put 40,000 pounds of material into the back of the truck. It really doesn't matter whether it is filled with steel or concrete because you're not going to load that trailer to water level and still be legal. But because steel is so much lighter and less bulky, you get rid of a greater percentage of material each time you load a truck with steel. To ship material is expensive – you want to do it in the least amount of trips.

PLANNING Building owners and developers need to think about demolition someday – what's going to happen to the material when the building isn't useful anymore? There's a movement by the Green Building Council pushing owners to think about their building when it has to be torn down. If you make a building out of steel, it will always be recyclable. Steel will always have value.

MIXING Try to picture a pot of molten steel, it's kind of like a big pot of stew or soup. When you're cooking and you want to make it spicier, you just put an additive in. But instead of pepper, you might put in more manganese or chrome. That's what's called altering the chemistry of the batch. Basically, if you're making structural steel, the mill will put in a base of reclaimed structural steel – like a recipe. Now if we were making re-bar, the chemistry for that is completely different than structural steel.

STEEL We always factor the scrap price into a project. In fact, there are jobs valuable enough that we will actually pay to do the work just for the scrap material. We're even going back to bids from a year and a half ago where we said we'd wreck the building for a quarter of a million dollars. Now, we're calling them up asking to do the job for free. We might even give them 50 grand or something like that. That's the great thing about steel – it always has value.

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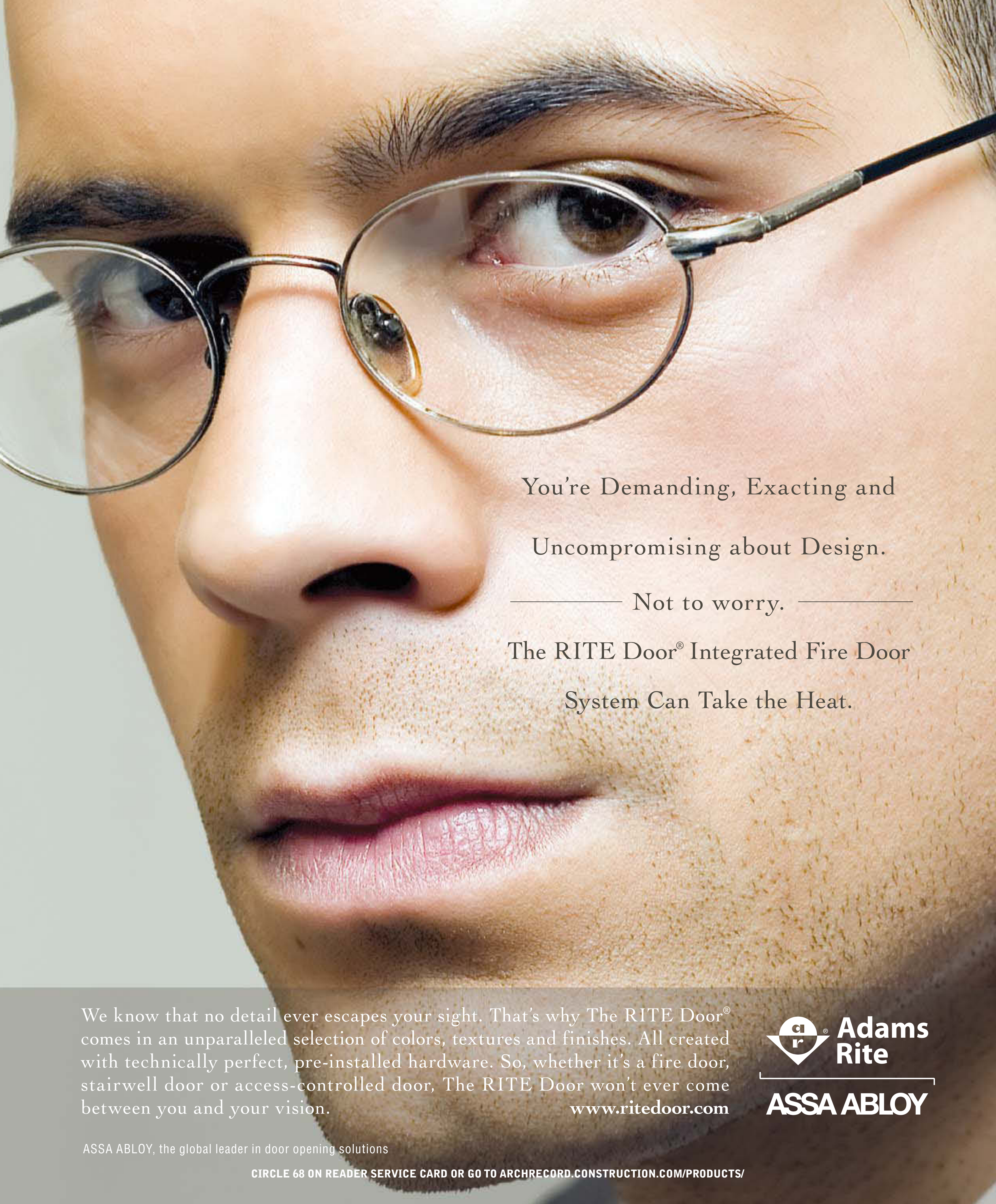
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(Mis)Understanding Green Products

A DIZZYING ARRAY OF GREEN-PRODUCT CERTIFICATION PROTOCOLS ARE OVERWHELMING THE BUILDING INDUSTRY—EVEN STAUNCH ADVOCATES SEE A TOUGH ROAD AHEAD FOR ARCHITECTS

By Russell Fortmeyer

Herman Miller's Celle chair meets both Cradle to Cradle and Greenguard product-certification requirements.

PHOTOGRAPHY: COURTESY HERMAN MILLER INTERNATIONAL

Stan Rhodes, the president and C.E.O. of Scientific Certification Systems, or SCS, certifies building products. He's been doing it since 1984. You bring him carpet you think is sustainable and he'll certify it against the new NSF 140 *Sustainable Carpet Assessment Standard*. Bring him anything and he'll likely find a standard, somewhere, to use for certification. There are thousands of standards, most of which are accredited by the American National Standards Institute (ANSI), so Rhodes is in no danger of running out of work.

But today, Rhodes doesn't want to talk about standards or certification. If you're talking sustainability, Rhodes says, so-called green building products don't much matter in the scheme of things. "Building envelopes are only 15 percent of the total life-cycle impacts of any building," he says, sitting in his office in Emeryville, California. For Rhodes, life-cycle impacts mean energy use, or the carbon footprint. He says the real question is how you reduce the energy impact of the work function—that other 85 percent consisting of the people who spend a minimum of 8 hours of their day sitting in your building, when not commuting—on the natural environment of your building and the larger region.

That one of the more influential people in the sustainable design world is growing impatient with the mounting army of building products purporting to be "sustainable" should be alarming. But talk to anyone who specifies, designs, builds, or certifies green products and you'll hear the same frustration lurking in their voice. "We're trying to balance delivering what the client wants on schedule and on budget, so adding this other level of complexity of having to understand what standards and what certifications to take seriously is difficult," complains Melissa Mizell, an interior architect at Gensler's San Francisco office. "You either have to embrace the challenge or give up." That sentiment is expressed by many architects working in sustainable design, even those supported by in-house sustainability experts with the resources of a large firm.

The design world is discouraged because there is no uniformly reliable industry consensus in certifying many green products and, in this vacuum, organizations and special interests are rushing in with programs and certification labels of sometimes dubious quality. Slap a picture of the earth on anything and, presto, it's earth-friendly. The green products jumble might be sustainable design's first internal crisis. And you've been warned.

CONTINUING EDUCATION

Use the following learning objectives to focus your study while reading this month's ARCHITECTURAL RECORD/ *AIA Continuing Education article. To earn one AIA learning unit, including one hour of health, safety, and welfarecredit, turn to page 181 and follow the instructions. Other opportunities to receive Continuing Education credits in this issue can be found beginning on page 184.*

LEARNING OBJECTIVES

After reading this article, you should be able to:

1. *Discuss various product certifications in the building industry.*
2. *Explain the surge of new green product labels in the design industry.*
3. *Describe the difference between first-, second-, and third-party certifying labels.*

For this story and more continuing education, as well as links to sources, white papers, and products, go to **architecturalrecord.com/tech/**.

The standard response

Standards can come from anywhere. If you can get enough volunteer industry players—manufacturers, trade organizations, government experts, scientists, environmentalists, architects, and other interested parties—in a room, with a few years and some good luck, you can produce a standard. That's more or less what happened with NSF 140, the sustainable carpet standard. NSF International is a nonprofit, nongovernmental organization that provides the umbrella for the development of ANSI-accredited standards. NSF and the American Society for Testing and Materials (ASTM) are the two biggest players in the U.S. standard-making world. Neither organization enforces its standards, nor certifies products against standards. They simply ensure that appropriate protocols are followed, that a consensus is reached, and that the standard is published.

Dru Meadows, AIA, is a consultant and founder of Tulsa-based theGreenTeam, which advises corporations and product manufacturers on sustainability. She is also a volunteer on ASTM's sustainable building com-

A Brief Guide to Select Green Product Certifications

Many products, many labels This chart is not comprehensive, but it gives a flavor of green product certifications. A Web site for the North Carolina–based nonprofit, cross-industry group, The Green Standard (www.thegreenstandard.org), condenses most known programs into a user-friendly matrix.

FSC Forest Stewardship Council Certification for Forest Management and Chain of Custody, www.fsc.org
Established: 1993
Industry: Forest products
About: FSC is an independent, nonprofit organization that sets standards for sustainable forest management and accredits third-party organizations to certify products. **Relevance:** FSC is the only sustainable wood certification recognized by the USGBC's LEED rating program and has wide industry recognition.

Energy Star Environmental Protection Agency, www.energystar.gov
Established: 1992
Industry: Electronics, appliances, HVAC, building systems
About: EPA's Energy Star was established to standardize energy efficiency for a range of products and buildings. **Relevance:** Energy Star continues to be updated and is one of the most successful federal government programs. The EPA launched the Watersense program in 2007 to address water-saving products.

SCS Sustainable Choice Scientific Certification Systems, www.scscertified.com
Established: 2006
Industry: Indoor carpet, other building products
About: SCS's Sustainable Choice label recognizes carpets that conform to the NSF 140 standard for sustainable carpet, but will expand to other industries and standards. **Relevance:** SCS is a third-party testing and certification organization widely recognized in the sustainable design community for its impartial and reliable work.

MPI Green Performance Master Painter's Institute, www.specifygreen.com
Established: 2005
Industry: Paint, lacquers, stains, floor coatings, and fire retardants
About: This standard is based on the EPA's standards for VOC content levels in surface coatings, as well as those of California's Air Quality Management Districts. **Relevance:** Green Seal's sustainable paint standard is based on MPI's Green Performance, and it is recognized in the LEED rating system.

SFI Sustainable Forestry Initiative, American Forest & Paper Association, www.about-sfi.org
Established: 1996
Industry: Forest products
About: SFI was launched as a response by the timber industry to the establishment of FSC. It's a third-party certified standard that verifies sustainable logging and reforestation. **Relevance:** SFI certification is not currently accepted by LEED, although this has been the topic of much research and discussion in the sustainable design community.

Greenguard Greenguard Environmental Institute (GEI), www.greenguard.org
Established: 2002
Industry: Building products and furniture
About: GEI is a third-party, nonprofit organization that certifies products for emissions for indoor air quality.
Relevance: The Greenguard air-quality certification has achieved wide industry acceptance, from Cradle to Cradle to LEED. It has been incorporated into other standards for a variety of products.

Cradle to Cradle McDonough Braungart Design Chemistry (MBDC), www.mbdc.com
Established: 2005
Industry: Any
About: MBDC's program uses life-cycle assessment, focusing on recyclability, disassembly, and material content as chief concerns.
Relevance: Cradle to Cradle has significant industry recognition and is considered comprehensive, but its proprietary, closed process and lack of certified products has frustrated the design community.

Planet Positive dCarbon8/Battle McCarthy, www.planet-positive.org
Established: 2006
Industry: Products and buildings
About: dCarbon8 established the program to standardize how carbon credits have been treated in the building industry. Products and buildings are given credits that must be offset by owners.
Relevance: Planet Positive has lately focused on buildings, since few if any products offer the credits. Its U.K. base has limited efforts to expand in the U.S.

CRI Green Label Plus Carpet & Rug Institute (CRI), www.carpet-rug.org
Established: 2004
Industry: Carpet
About: This label indicates compliance with California's CHPS Section 01350 for acceptable emissions for indoor air quality, also recognized as the NSF 140 standard for sustainable carpet.
Relevance: This label is simply the carpet industry's recognition of its sustainable products and, though respected, is still considered a second-party label.

Green Seal Green Seal Organization, www.greenseal.org
Established: 1989
Industry: Building products
About: The nonprofit, independent Green Seal develops accredited, open standards based on existing standards, all focused on life-cycle assessment for many products. **Relevance:** Green Seal standards are cited by LEED, as well as by government entities. Although it maintains standards for a limited group of products, it is viewed credibly in the market.

The information included in this chart was compiled through a range of sources, including interviews for the accompanying article, previous reporting for ARCHITECTURAL RECORD and *GreenSource* magazine, information provided by the organizations profiled, and from the organizations' Web sites.

mittee, which covers products and buildings. There are hundreds of standards on the committee's wish list. For example, there is currently no industrywide, specific standard on what qualifies—the materials, techniques, and process—as acceptable rammed-earth construction. That could explain why many clients shy away from such building methods. While there are many standards in development, including those for rammed earth, there are a few ASTM standards that act as umbrellas for sustainability, such as the ASTM E2129-05 *Standard Practice for Data Collection for Sustainability Assessment of Building Products* and ASTM E2432-05 *Standard Guide for General Principles of Sustainability Relative to Buildings*. If you drop a reference to ASTM E2129 into your green specifications, you're basically forcing the manufacturers of the products for your project to comply with a standard set of submittal criteria. This allows manufacturers to compete on an even keel. "E2129 was motivated by frustrated manufacturers who were getting questions from architects such as 'is your product green,' " says Meadows. "Now the attributes are on an apples-to-apples basis. With this market evolving as it is, this is a big accomplishment."

Of course, this evolving nature of the green-products market leads to another set of problems. To return to our example of carpet, an architect might ask why you would need a standard that focused specifically on sustainability. After all, shouldn't all carpet be sustainable? Why have two standards? For the most part, this is guided by the industry, which needs to fulfill the demands of both nonsustainable and sustainable markets. But also by chance, as the State of California, seeking to reduce landfill waste, focused its efforts toward developing a sustainable standard since discarded carpet was its biggest landfill culprit (the standard originated with yet another party, the independent Institute for Market Transformation to Sustainability, or IMTS, which is a Washington, D.C.–based cross-market group of concerned manufacturers). Alternately, with our example of rammed-earth construction, there is no need for a specifically "green" standard, since there are, more or less, only a few ways to do it. Judging a rammed-earth wall's sustainable attributes would be more appropriately handled in a "whole-building" rating system, like the U.S. Green Building Council's LEED program. You could write a book—and many have—about the proper way to evaluate sustainability in a building or the components of a system. Meadows says this is one of the difficulties of even talking about sustainability standards, since you have to consider things like the economic and social issues tied to the product, in addition to the environmental concerns. Measuring an attribute like indoor air quality is a science, whereas accounting for sustainability is more of an art. "It requires not just a familiarity with the materials and your systems," she says, "but a background in applied ecology, socially responsible investing, or any number of environmental issues."

MEASURING INDOOR AIR QUALITY IS A SCIENCE, WHEREAS ACCOUNTING FOR SUSTAINABILITY IS MORE OF AN ART.

If it's so difficult to coordinate the thousands of players in the building industry, why doesn't someone with practically unlimited resources and authority step in to streamline the process—someone like the federal government? It certainly isn't missing from the picture, since the Department of Energy (DOE) and the Environmental Protection Agency (EPA) both play large roles in shaping the national agenda toward sustainable design, but bureaucracies and a scattershot approach of uncoordinated programs also hamper them. It may come as little surprise to know there is no productive "sustainability czar" in this White House, but that may be what it would take. There are bright spots. By far, the biggest success of the DOE and EPA is Energy Star, a joint program dating to 1992 that is most widely known for consumer electronics. This is a voluntary program that is single-attribute—it basically guarantees a product meets energy-efficiency criteria—and it is based on existing standards, rather than being a standard itself. For example, the Energy Star requirements for a geothermal heat pump are based on standards prepared by the International Organization for Standardization (ISO). This approach—creating a product label based on other standards—is common and partly explains the rash of new green product labels. However, architects interested in sustainability often find the single-attribute label certification to be of limited use. Having an energy efficient geothermal heat pump makes sense, but not if that pump is constructed of materials that harm the environment. A multi-attribute certification could address this.

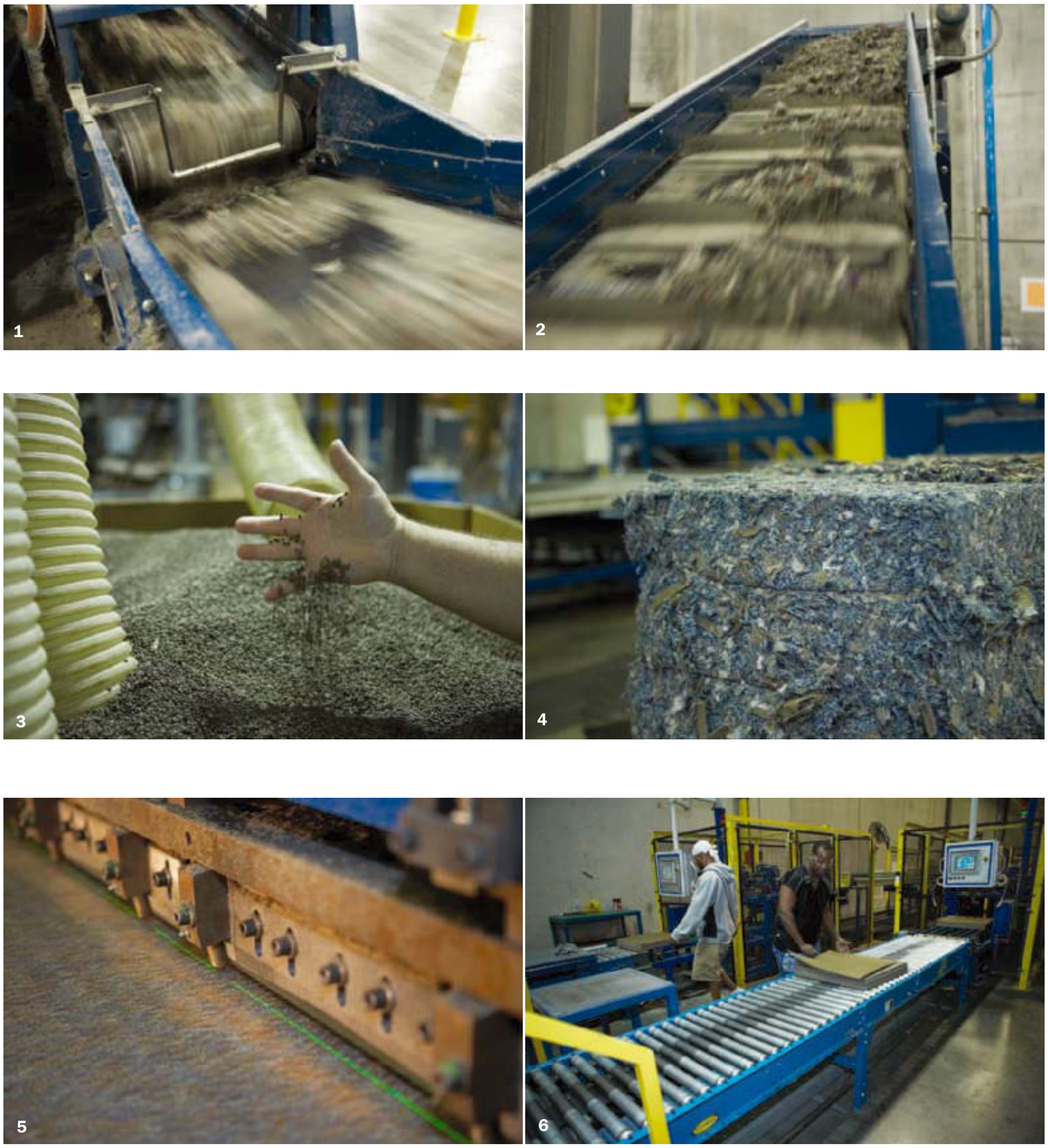
The hand that rocks the cradle

In 2007, the most recognizable of the multi-attribute certifications is McDonough Braungart Design Chemistry's Cradle to Cradle program, which achieved notoriety with the 2002 book, *Cradle to Cradle: Remaking the Way We Make Things*, written by William McDonough, FAIA, and Michael Braungart. The idea of making a product that would be endlessly used or reused has been so compelling in the sustainable design industry that "cradle to cradle" has become shorthand for the goals many people and organizations are working toward. It's the Kleenex of sustainable design. McDonough Braungart, or MBDC, developed the program as a proprietary standard, so a manufacturer is forced to submit materials to MBDC for evaluation and certification. Cradle to Cradle focuses on the life-cycle of a product, looking at where it is produced, the materials' sources, and how it is used after it's no longer needed—all in addition to the product's construction and performance. Although the Cradle to Cradle program, which was officially launched in 2005, is not an accredited standard, it is partly based on accredited or consensus standards similar to the way the Energy Star program is structured. While Cradle to Cradle is one of the few certification labels that qualifies for a LEED Innovation point and also satisfies the EPA's Environmentally Preferable Products requirements for government purchasing, few manufacturers have invested in certification.

While many in the design industry see Cradle to Cradle as an important development, many regret the proprietary nature of the program—as well as the conflict of interest posed by a manufacturer hiring MBDC as a sustainable product consultant and then paying them to certify its products—and think these issues will limit its effectiveness. But no one denies that the program, which could apply to anything from a toothbrush to a 747, is one of the most comprehensive on the market.

Paul Murray, director of environmental health and safety at Michigan-based Herman Miller, has seen a lot of changes in the industry since he started working on environmental issues full-time for the company in 1992. Herman Miller—a manufacturer long committed to environmental concerns—was the first company to certify a furniture product, the Mirra chair, as Cradle to Cradle. "To some degree, it hasn't always been a huge degree of cost," Murray says. "Reengineering products to meet Cradle to Cradle has produced some less-expensive features that have been patentable. So, we try to integrate it as early as possible in the design process." Part of what the program does is divide materials into good, okay, and bad categories, assigning them colors. Green stands for good, red for bad. Put a red chemical in your plastic, you might fail to get certified. Herman Miller has now embarked on a process of ridding their supply chains of red materials.

A benefit to embracing Cradle to Cradle has been that it practically ensures the products will comply with any other standard. For example, Herman Miller has been testing its products for low emissions of Volatile Organic Compounds (VOCs) for decades, but now certifies them against



Shaw Contract Group's Ecoworx carpet tile is a Cradle to Cradle product. (1) Old carpet is returned to Shaw's plant, where it is ground up (2) before having the backing and fibers separated. (3) The backing is then melted and turned into fine pellets. (4) At this point, the backing is re-formed into new back material before it is extruded and cut (5). Shaw documents every carpet installation, so it can pursue recycling the material after use. (6) The recycled backing is then combined with the recycled nylon to form new carpet tiles. In August 2007, Shaw introduced a broadloom version of the carpet, but it will take at least seven or more years to reach the point of full recyclability.

the Greenguard Air Quality standard. This is an ANSI-accredited, consensus-based standard provided by the nonprofit Greenguard Environmental Institute (GEI), which is exclusively affiliated, though independent from, the Air Quality Sciences testing lab (AQS). Herman Miller also participated in the development of another indoor-emissions standard by the Business and Institutional Furniture Manufacturer's Association (BIFMA). "I don't know which one will shake out in the long run, but both have credibility because they are recognized by the USGBC," says Murray. An industry leader, Herman Miller has resources to not only push the market toward specific standards, but also to cover the short-term certification bases.

Not every manufacturer can afford every green label. Michigan-based Haworth may be a competitor to Herman Miller in some markets, but it also shares similarly ambitious environmental goals. Aside from Cradle to Cradle certification for its Zody chair, it also worked with London-based mechanical engineer Guy Battle to achieve a Planet Positive certification. Battle's open-protocol program, based on the ISO 14025 standard for environmental labels and declarations, tracks carbon emissions along the supply chain of a product, accounts for them as credits, and then passes those credits to the end user. Someone purchasing a Zody chair then must invest in a renewable-energy project that would offset 110 percent of those emissions credits. "You have to keep in mind that this is an emerging market," Battle says. "The key issues are going to be transparency, accountability, and honesty, so we're taking our time to ensure our protocols are rigorous."

MBDC is aware of the challenge that lies ahead for Cradle to Cradle. In September 2007, MBDC announced a collaborative relationship with the influential architectural materials sources company Material ConneXion, geared toward helping companies develop more sustainable materials and products. Steve Bolton, MBDC's manager of business development, says they haven't made a decision about turning Cradle to Cradle into an open standard that people could certify against outside of MBDC. "A consensus-based standard is valuable in that you are bringing people together to create it, but it could be watered down in the end because you are trying to make sure anyone can meet it," Bolton says. "All of our criteria are widely accepted in the scientific community and typically go beyond what is stringent for any authoritative body."

PHOTOGRAPHY: COURTESY SHAW CONTRACT GROUP

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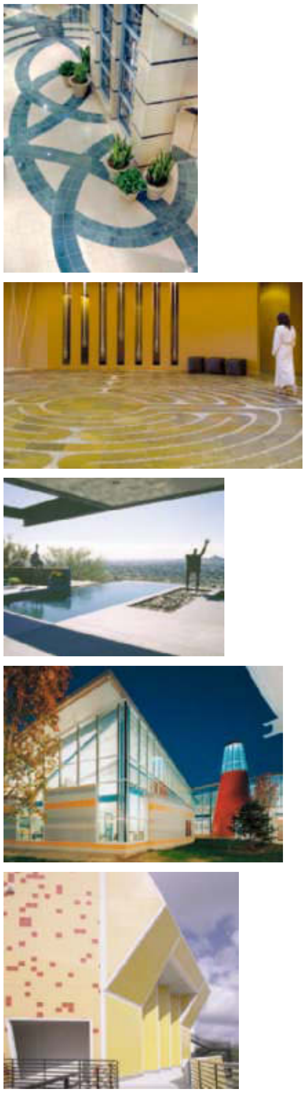

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The Greenguard air-quality voluntary standard includes more than 150,000 certified products from more than 100 manufacturers, among them (1) Dupont's Corian line, (2) CertainTeed's SoftTouch duct-wrap insulation, (3) Georgia-Pacific's DensArmor Plus abuse-resistant paperless drywall, and (4) Knoll's Dividends Horizon office furniture system. Greenguard is an independent, third-party organization that certifies building products for the emission of Volatile Organic Compounds. The program is recommended by the USGBC's LEED, the National Association of Home Builders' Green Building Guidelines, and the Green Guide for Health Care, among other sustainable design initiatives.

4

PHOTOGRAPHY (CLOCKWISE FROM TOP LEFT): COURTESY DUPONT; CERTAINTEED; GEORGIA-PACIFIC; KNOLL

Get the third party started

Product certifications, expressed with labels, mostly break down in three ways: first party, second party, and third party. First-party certification generally means the product manufacturer set up and then tested against the conditions that supposedly qualify the product as green. SC Johnson's new Greenlist program is an example of a first-party program, as the claims represent SC Johnson's own investigations of its products based on a system of its own design. Regardless of the merits of the manufacturer's program—and to be fair, SC Johnson has a comprehensive environmental policy that puts many companies to shame—most architects working in sustainability distrust first-party labels. Second-party labels are more of a gray area, since these are often based on consensus standards established by an industry's trade organization. For example, the Carpet and Rug Institute's Green Label Plus is a second-party label. Third-party labels, on the other hand, often come from a range of organizations outside of the industries seeking certification. The Forest Stewardship Council (FSC) is a well-known third-party certification and label for sustainably managed forests and timber supply chains. LEED recognizes FSC, but doesn't recognize the Sustainable Forestry Initiative (SFI), which is administered by the timber industry. However, SFI certifications are undertaken by independent third parties, such as PriceWaterhouseCoopers, since standards development is usually separate from certification. Other third-party programs include the aforementioned Energy Star and Greenguard, as well as California Gold and Scientific Certification Systems' Sustainable Choice and Indoor Advantage Gold.

All of this can get very confusing, very fast. So, let's return to our carpet example. If you needle down to the fine print in many of the labels and certifications for sustainable carpet, they often rely on only a few real standards. On the VOC emissions side, the Carpet and Rug Institute (CRI) based its Green Label Plus on California's Collaborative for High Performance Schools (CHPS) Section 01350 requirements for indoor-air-quality testing standards. SCS's Indoor Advantage Gold program for carpet is based on Section 01350, too. The limits for VOC emissions in NSF 140—the broader sustainable carpet standard SCS can certify against in its Sustainable Choice program—also refer to Section 01350. If you see a pattern here, it's that three certification programs for carpet all rely, in part, on an emissions standard developed by the State of California for

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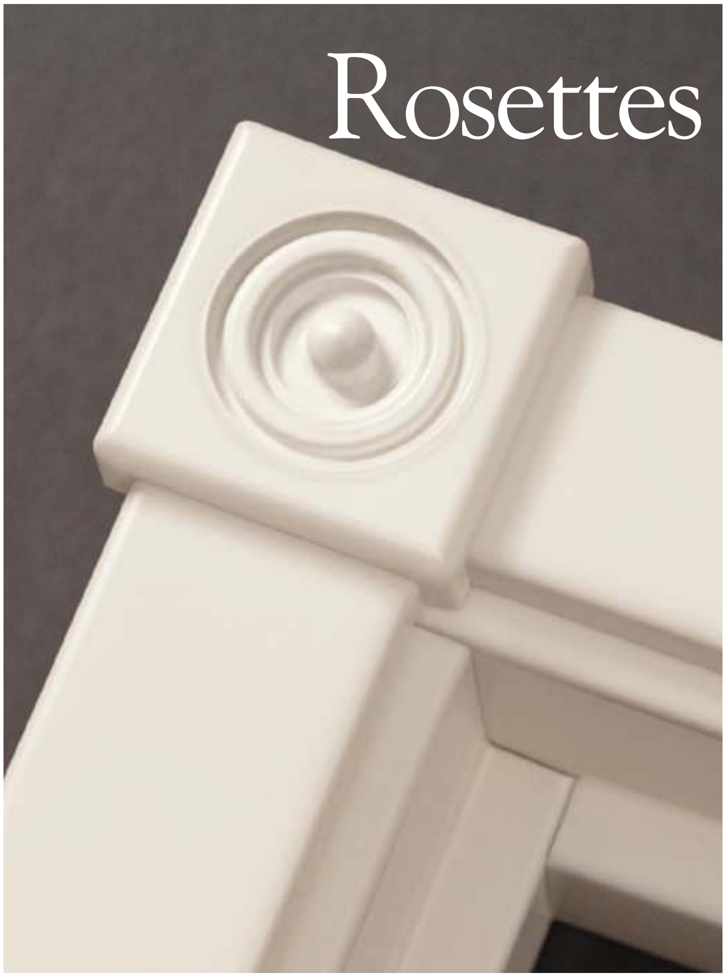

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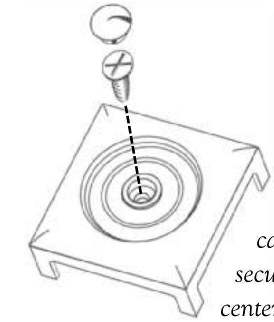

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public projects. While California helped develop NSF 140, it ultimately felt the standard wasn't stringent enough for emissions, which is why the state published a revised standard, California Gold. NSF 140 is organized like LEED, with different levels of compliance for Silver, Gold, and Platinum. Since California Gold is now identical to NSF 140 Platinum, it will be phased out in a year.

"There's no question the state has used its purchasing power to motivate change in the marketplace," says Dan Burgoyne, an architect who works as the sustainability manager for California's Department of General Services. Although Burgoyne knew there were no carpets certified to NSF 140 Platinum months before it went into effect in September 2006, by the time the deadline rolled around, there were close to eight products certified and on the market. "We put a lot of effort into the carpet standard and probably won't be able to put as much into the others," he says, though he adds the state is working with BIFMA on sustainable office furniture and with Green Seal on sustainable cleaning standards. NSF 140 has been a good model for other standards, Burgoyne says, because it's a multi-attribute standard that looks at product development, manufacturing, use, and end use.

No end in sight

It's likely the next decade will be filled with new standards and certification labels, giving architects little relief. Marilyn Black, founder of Georgia-based Greenguard and AQS, sees no sign of consolidation any time soon. "I certainly don't see the government in a leadership role of trying to bring this together," Black says. "From my perspective, some of the leading programs need to take a proactive step to focus the industry." TheGreenTeam's Meadows agrees, but she thinks market competition will increasingly come into play. "Certifications and labels are products, so you have to ask which one has more credibility, is least expensive, and most adaptable," she says. "I wouldn't want to say the only way to do things is with ASTM or ISO or LEED because competition is not a bad thing. At some point there are going to be clear winners."

Back in California, SCS's Rhodes still considers life-cycle assessments the missing ingredient in many of these new programs, especially since it allows you to make incremental improvement in larger issues affecting sustainability. And he doesn't see a "super-label" for green products on the horizon. "When you get to the product level for certification, most likely there are going to be trade-offs. There is no magic green bullet," Rhodes says, suggesting that creating standards an industry can easily meet won't do much to change the effects of global warming. "With a life-cycle assessment, some of these materials just don't cause enough impact to show up. We see industrial standards we don't agree with, we have to set our own." With green product certification, that seems to be something on which everyone can agree. ■

AIA/ARCHITECTURAL RECORD CONTINUING EDUCATION

INSTRUCTIONS

- **Read the article "(Mis)Understanding Green Products" using the learning objectives provided.**
- **Complete the questions below, then fill in your answers on the next page.**
- **Fill out and submit the AIA/CES education reporting form on the next page or download the form at archrecord.construction.com to receive one AIA learning unit.**

QUESTIONS

1. The American Society for Testing and Materials does which for standards?
a. enforces standards
b. certifies products against standards
c. ensures standards are followed
d. ensures standards are published according to acceptable guidelines

2. Inserting a reference to ASTM E2129 into your specifications results in which?
a. ensures the result will be a LEED-certified project
b. forces manufacturers of products for your project to comply with a standard set of submittal criteria
c. answers the question, "Is your product green?"
d. certifies products against standards

3. The Energy Star program is all except which of the following?
a. an energy efficiency standard
b. a voluntary program
c. based on existing standards
d. a guarantee that a product meets energy-efficiency criteria

4. Creating a product label based on other standards explains what phenomenon?
a. the creation of volunteer industry organizations
b. the evolving nature of the green-products market
c. the rash of new green product labels in the market
d. the creation of multi-attribute product-certification labels

5. A proprietary certification program that focuses on the life-cycle of a product is known as which?
a. Environmentally Preferable Products
b. Energy Star
c. Cradle to Cradle
d. Cradle to Grave

6. The first company to certify a furniture product as Cradle to Cradle was which?
a. Herman Miller
b. Haworth
c. Steelcase
d. MBDC

7. Architects often distrust first-party certification of a product because of which?
a. an industry organization participated in the formation of the standard
b. the product manufacturer established the standard
c. an independent organization created the standard
d. the state of California created the standard

8. An example of a non-industry-developed, independent certification program is which of the following?
a. Carpet & Rug Institute's Green Label Plus
b. Forest Stewardship Council
c. Sustainable Forestry Initiative
d. SC Johnson's Greenlist

9. Which of the following tracks carbon emissions along the supply chain of a product, accounts for them as credits, and passes them to the end user?
a. first-party certification
b. Cradle to Cradle
c. Planet Positive certification
d. Scientific Certification Systems

10. Building envelopes impact which percent of the energy use in the total life-cycle of any building?
a. 85 percent
b. 60 percent
c. 45 percent
d. 15 percent

AIA/ARCHITECTURAL RECORD CONTINUING EDUCATION

Program title: "(Mis)Understanding Green Products," Architectural Record (11/07, page 173).

117EDIT1

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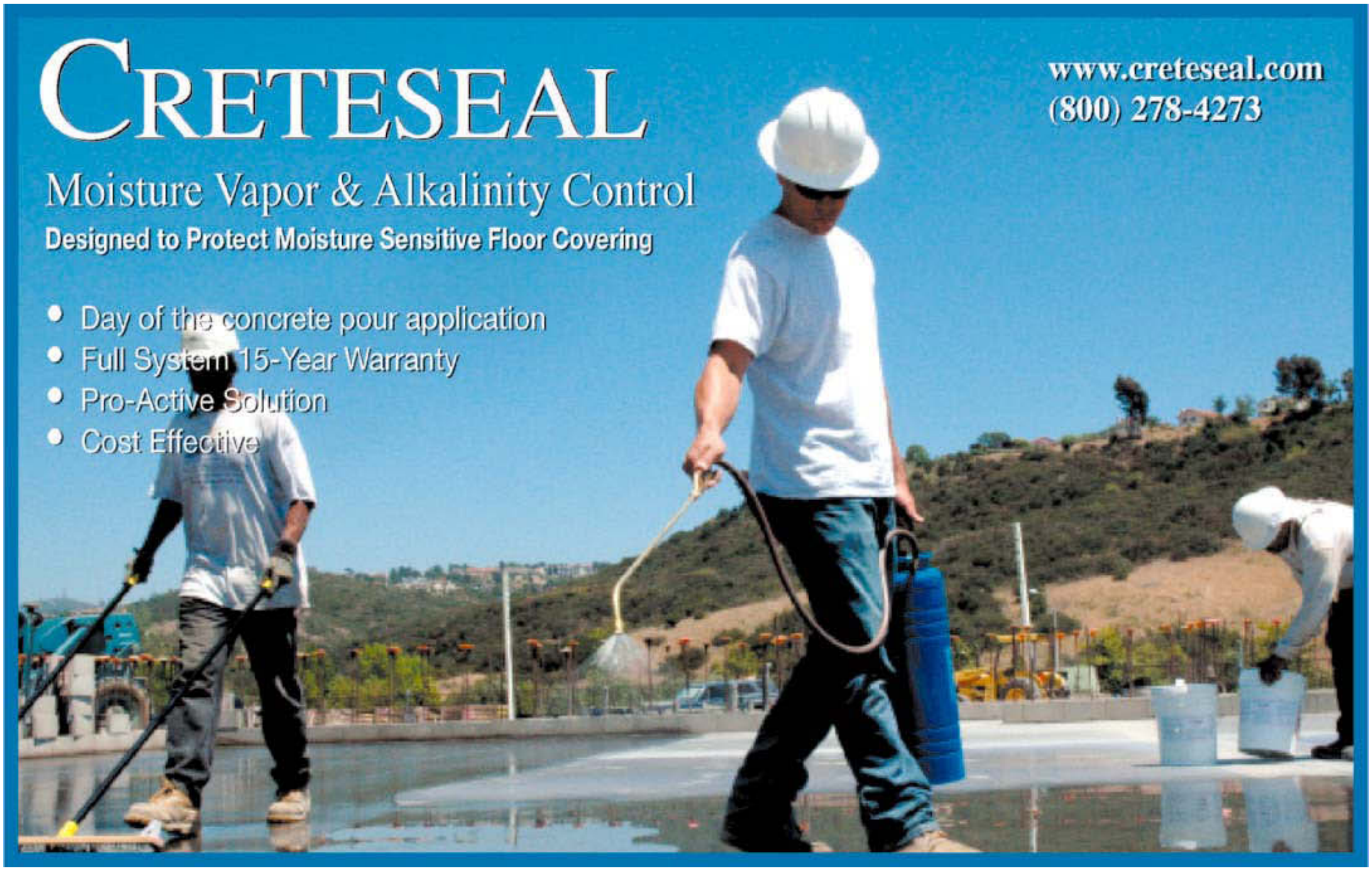
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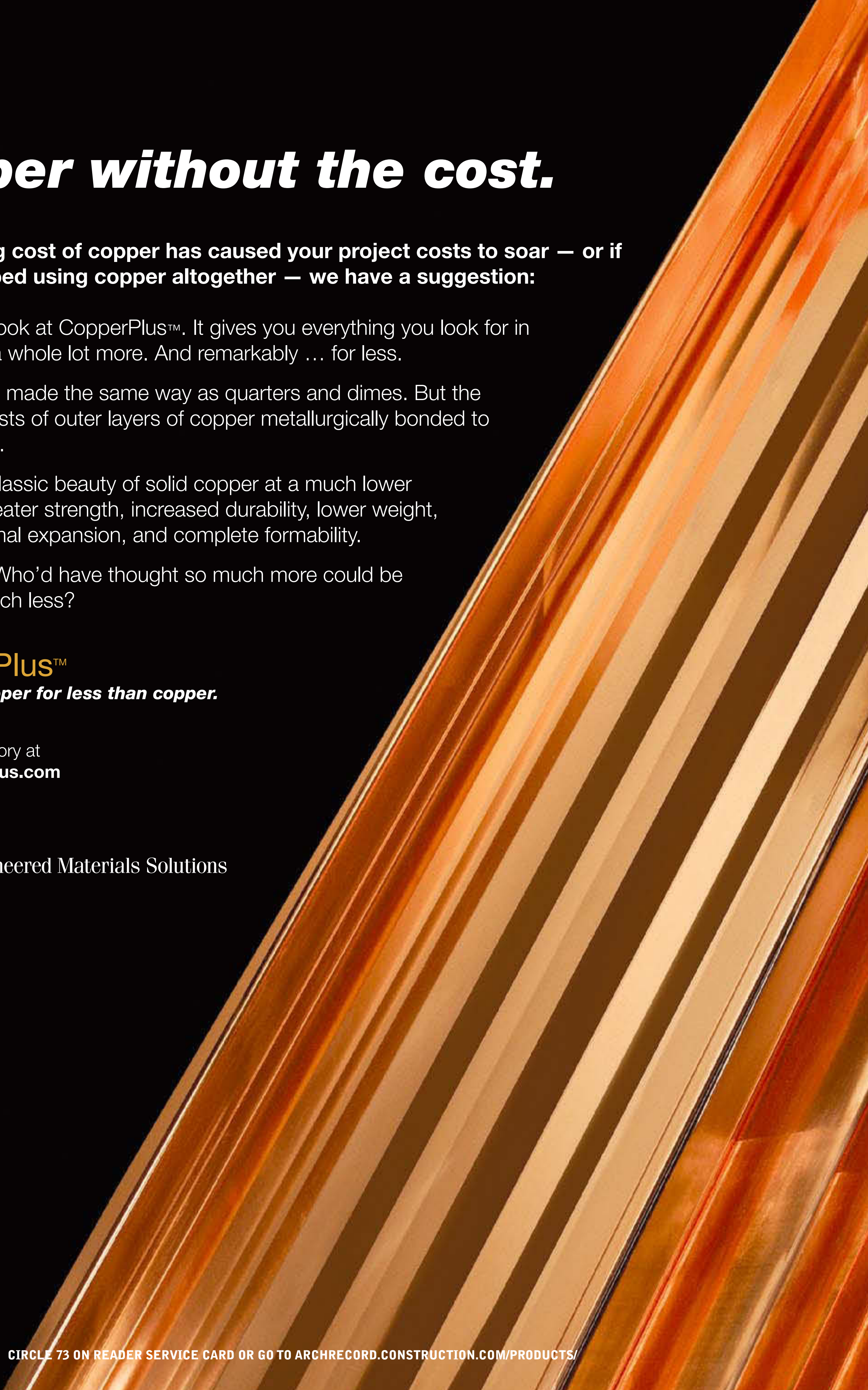

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Tech Briefs

For some **LEED projects**, one certification is not enough • **Living roof monitoring effort** confirms environmental benefits • **Glass:** transparent, translucent, and ironic

Owners tout operational advantages, but dual LEED certification is slow to catch on

Since the launch of LEED for Existing Buildings (EB) three years ago, the U.S. Green Building Council (USGBC) has seen modest participation in its program focused on encouraging best practices in the ongoing operations and maintenance of already constructed buildings. So far, about 400 buildings have been registered with the council, while approximately 75 projects have achieved certification.

According to council estimates, fewer than five of these EB-certified projects had been previously certified under the popular LEED for New Construction (NC) rating system. Uptake of dual certification has been slow even though EB proponents say that the program can help owners maximize performance, even for a building designed to operate at a high level. An NC building without EB certification "is a little like a car without a maintenance plan," says Michael Arny, president of consulting firm Leonardo Academy and former chair of the council's LEED EB committee.

For a building already NC certified, few if any infrastructure changes would be needed to achieve EB certification. Instead, EB requires performance testing and tracking of resource use. "It should be possible to certify an NC building without additional capital expenditures," says the USGBC's Doug Gatlin, who oversees the EB program.

One NC project seeking EB certification is the Polshek Partnership–designed William J. Clinton Presidential Center, in Little Rock, completed in 2004 and certified at the Silver level. Some of the measures the center has recently instituted include the addition of metering devices to monitor energy and water use, replacement of cleaning supplies with environmentally benign products, installation of mulching blades on lawn mowers, and the creation of a recycling and waste-stream-management program. "Most of the credits are low- or no-cost," says Debbie Shock, director of operations and facilities for the William J. Clinton Foundation.

Two previously certified NC projects, the Clinton Library (above) and the Solaire (right), are seeking EB certification at the Platinum level.

Typical additional expenses incurred for EB certification include retrocommissioning fees, consultants' fees, and the cost of staff time for submittal preparation. Fees for review of an application by the USGBC are based on a building's size and range from $1,250 to $12,500.

Participants say documentation requirements can be demanding, though prior LEED experience helps. "We understand the process, but for others, it might be a lot of paperwork," says Michael Gubbins, director of residential management for the developer Albanese Organization. Gubbins's team is applying for EB certification of the Solaire in New York City. The 293-unit apartment building, designed by Pelli Clarke Pelli Architects, achieved Gold NC certification after its opening in 2003.

Owners can expect to realize savings from EB program participation, advocates say. After first earning a LEED NC Silver rating for its Brengel Technology Center in Milwaukee, Johnson Controls recertified the 130,000-square-foot building under the EB program at the Gold level three years later. EB implementation, including installation of expanded building-systems monitoring devices, modification of landscape practices, and replacement of light-fixture lamps, cost $27,250, according to a case study of the project by the USGBC. However, these measures save Johnson Controls $27,780 annually in utility and overall operational costs, says the study.

Greater savings could be possible after a revamped EB is launched this month. The council has focused the updated rating tool, to be called LEED EB Version 2008, even more narrowly on operations, removing some credits pertinent only to new construction. It places more emphasis on energy use and water efficiency, and is less prescriptive than the current version. For example, instead of awarding a credit for installation of a bike rack, projects can earn points for occupants' use of alternative transportation. Says Gatlin, "The new version is about performance rather than technology."
Joann Gonchar, AIA

PHOTOGRAPHY: © TIMOTHY HURSLEY (TOP); DBOX ADVERTISING AND DESIGN (BOTTOM)

ASLA green roof yields impressive benefits

The installation includes planted "waves" that hide rooftop mechanical units.

Earlier this fall, the American Society of Landscape Architects (ASLA) released performance data for the green roof planted on its Washington, D.C., headquarters. The findings demonstrate a number of environmental benefits, including a significant reduction in storm-water runoff, retaining 27,500 gallons of water, or nearly 75 percent of precipitation, during a 10-month monitoring period.

The results suggest that widespread implementation of green roofs and other sustainable site development practices could be a viable storm-water-management option, particularly in cities with older, and overburdened, combined sanitary and wastewater transportation systems. "Collectively, green roofs could save billions of dollars in urban infrastructure costs," says Nancy Somerville, the society's C.E.O.

The ASLA installed the roof in spring 2006 in lieu of replacing its deteriorating 3,000-square-foot conventional roof. The retrofit, designed by New York City–based Michael Van Valkenburgh Associates, includes planted berms that camouflage mechanical units and an extensive green roof system protected by metal grating at circulation areas.

In addition to measuring runoff, researchers also monitored water quality, comparing it to that of rainwater. Surprisingly, the installation's effectiveness in reducing runoff hindered collection of testing samples. "There were many instances when there was no effluent," says Charles Glass, associate professor of civil engineering at Howard University. Glass and environmental consultant ETEC conducted the water-quality and -quantity monitoring.

The runoff that investigators did collect contained some contaminants considered harmful to natural water bodies, but within concentrations allowed by the the U.S. Environmental Protection Agency. The ASLA expects the quality of the runoff to improve over time. "Young green roofs leech nutrients," says Somerville. The organization plans to repeat the quality tests in two years and compare the runoff with that from a conventional roof.

The monitoring effort also revealed a potential for saving energy and mitigating the urban-heat-island effect. The installation lowered summer air temperatures by as much as 32 degrees when compared with a nearby standard roof. Although winter energy use dropped by 10 percent, cooling-season reductions were not demonstrated due to an oversize air-conditioning system, says Somerville. After making mechanical system adjustments, the ASLA expects to realize savings next summer. *J.G.*

Conference examines a single material's properties and its inherent ironies

If there were a prize for the project most often mentioned during the conference "Engineered Transparency: Glass in Architecture and Structural Engineering," it would go to the Glass Pavilion at the Toledo Museum of Art, in Ohio, designed by SANAA [RECORD, January 2007, page 79]. The first to present the building was the Tokyo-based firm's principal, Kazuyo Sejima, in her keynote address on September 26 for the two-day event at Columbia University, in New York City.

Several of the subsequent 30 speakers, including architects, consultants, and manufacturers, cited the one-story building that houses the museum's collection of glass art, for its transparency, minimal structure, and seeming simplicity. New York City–based Guy Nordenson, the project's structural engineer, discussed the pavilion as a manifestation of "infrathin," a term coined by Marcel Duchamp, but used by Nordenson to describe structure that seems to disappear. The Toledo project's immateriality is so pronounced that Nordenson joked he thought the plan was a bubble diagram when he first encountered it at SANAA's offices.

The apparent simplicity of Toledo's Glass Pavilion belies its complexity.

Some compromise was necessary to make the diaphanous container a reality. Matthias Schuler, of Stuttgart-based environmental consultancy Transsolar, revealed it took nearly a year to convince Sejima of the need for curtains to shield ultraviolet light. "That's the way of collaboration," he said. "You don't say 'it won't work' and walk out the door."

Transparency was not the only theme explored during the conference, which was sponsored by Oldcastle Glass and organized by Columbia's schools of architecture and engineering, along with the Institute of Building Construction at the Technische Universitat of Dresden. Sessions discussed blast- and hurricane-resistant design, the energy efficiency of glass buildings, and materials research.

The deep examination of a single material revealed some ironies. According to Graham Dodd, a mechanical and facade engineer in the London office of Arup, many of the coatings used to enhance the thermal performance of glazing also hinder recycling. Robert Heintges, a New York City–based curtain-wall consultant, pointed out that frits and coatings can also be at odds with the goal of pure transparency. Heintges noted: "Each manipulation to enhance energy efficiency can render glass less like glass." *J.G.*

PHOTOGRAPHY: COURTESY ASLA (TOP); © CHRISTIAN RICHTERS (BOTTOM)

Task Lighting Solutions: Their Economic and Ergonomic Benefits

Supported by human factors research and driven by demand for energy savings, task lighting is a critical component of efficient and effective workplace lighting solutions.

Provided by Humanscale

By Karin Tetlow

It was not so many years ago, when employees worked mostly with paper documents, that lighting, like other building systems, was designed around the belief that more is better. Workspaces of the 1960s and 1970s provided more light than the job required with little or no flexibility for the user. The result was wasted energy and a variety of human factors issues, such as eyestrain and headaches. Since then, new human factors research and enhanced technologies have provided designers with smarter solutions. Yet, many offices continue to use dated technology to illuminate workspaces. Moreover, lighting experts report, many designers and consultants pay more attention to the aesthetics of lighting than how it functions for employees.

But as more owners demand energy efficiency or US Green Building Council (USGBC) LEED® certification for their buildings, and a growing number of employers seek productivity measures, the need for functional and efficient office lighting is becoming increasingly critical—as is familiarity with lighting specifications and LEED requirements.

Today's workplace calls for flexible lighting systems that support the tools of the modern office, such as monitors and notebook computers. This suggests the integration of more appropriate lighting solutions into existing lighting plans, and the selection of the most advanced products for new office construction.

Office lighting design continues to move toward greater energy efficiency, while providing improvements for worker comfort and safety. This move toward environmentally responsible design can be further developed with the incorporation of task lighting into workplace lighting schemes that would typically use just ambient or overhead light sources.

CONTINUING EDUCATION

Use the learning objectives below to focus your study as you read **Task Lighting Solutions: Their Economic and Ergonomic Benefits.** To earn one AIA/CES Learning Unit, including one hour of health safety welfare credit, answer the questions on page 184F, then follow the reporting instructions or go to construction.com/CE/ and follow the reporting instructions.

Learning Objectives
After reading this article, you should be able to:

- Evaluate office lighting design for effective work environments.
- Recognize the importance of incorporating task lighting into an overall lighting plan.
- Identify the environmental, economic and human factor benefits of task lighting.

Courtesy of **Humanscale**

One recent example is the USGBC's new headquarters in Washington, DC, which achieved a LEED-Commercial Interiors (CI) Platinum certification. One benefit that accrued outside the recently renovated space, which included individual task lights, was a dramatic reduction in watts-per-square foot. Designers accomplished this by removing excess lighting fixtures, which resulted in energy savings for the building owner.

Recent research into the use of task lighting has provided evidence that incorporating positionable light sources into individual workspaces provides many benefits with regard to energy consumption. Additionally, it provides individual workers the freedom to position their light sources most comfortably. Moreover, reports Kate Charles, Ph.D. and Jennifer Veitch, Ph.D. in a presentation at Science Insight 2004, sponsored by the Canadian NRC Institute for Research in Construction, control over physical working conditions contributes to reducing effects of job-related stressors.

In contrast to the assumption that more lighting was better, recent research has shown us that more is not better, and in fact, is not desired by most workers. Providing too much light can lead to the following:

- Energy waste
- Emotional and physical discomfort for the office worker due to improper illumination of the work surface and glare on reflective surfaces (such as the computer monitor)

Using positionable task lighting in addition to low ambient light can lead to the following:

- Improved lighting quality, comfort and control for workers
- Increased energy efficiency

Task lighting can provide illumination where it is most needed—on paper-based documents—more economically than the most energy-efficient ceiling ambient light because task lighting is located closer to what is being lit. In addition, individual workers can gain control over their lighting as appropriate for the task being completed.

Flux, Illuminance and Luminance

Total flux, in lumens, is the parameter that bulb manufacturers use when describing the total amount of light given off by a bulb in all directions. Lumens do not, however, tell us how much light will be received where it is needed. Illuminance, on the other hand, tells us how much light will reach a given surface. Illuminance is generally measured in lux, which is a short form for lumens per square meter of surface area, the metric equivalent of footcandles (which represent lumens per square foot). There are 10.76 lux in one footcandle, but the lighting industry typically rounds this factor to 10.0 for the sake of simplicity.

If we compare a lighting fixture to a shower head, then the lumen output, or total flux, is the rate of flow of water and illuminance is the amount of water collected in a bucket at a given time. The key point is that the same total flux can give different amounts of water in the bucket, simply by moving the bucket, or by changing the spray pattern or by changing any physical obstructions between the source and the bucket. Total flux doesn't specify how much illuminance will be provided where it's needed. This is true, in part, because the luminaire, reflectors, lenses and other optical media can greatly affect the flow of light from the source to the work surface. Failure to remember this is a frequent cause of poor lighting design, especially in retrofit applications.

IES Illuminance Categories & Values

Activity	LUX	Footcandles
View CRT screen	50 - 100	5 - 10
Read standard document, photocopy or newspaper	200 - 500	20 - 50
View photo in moderate detail; reference phone book	500 - 1000	50 - 100
Perform visual task of low contrast or small size over prolonged periods of time	2000 - 5000	200 - 500

Illuminating Engineers Society recommended lighting levels for common office tasks.

©Bilyana Dimitrova/photography by Bilyana Dimitrova

First LEED Platinum certification in N.Y. State, Cook + Fox Architects LLP, New York City has a combination of task and ambient lighting.

Cook + Fox: Task Lighting With Daylight

The primary reason why Cook + Fox Architects LLP decided to move its office into a former 1902 Beaux-Arts luxury department store on 6th Avenue in New York City, was the extraordinary daylight coming through three walls of 9-ft high windows. The 12,121 sq ft space with its 14-ft high ceiling also helped serve the intention of the firm to feel like an open studio, visible for all walking into the space. To meet another goal of equality, where there are no 'bad' workstations, low- partitions were chosen to let daylight into every workspace. Completed in July 2006, the office is the first LEED® project to receive Platinum certification in New York State.

Included in the many features that earned LEED points—among them: a green roof, zone controls added to HVAC, sustainable materials, low-VOC paint, water-saving toilets—was the controllability and energy efficiency of the lighting.

Supplemental ambient light was provided by uplighting from efficient dimmable metal halide lamps mounted on the building's columns and connected to daylight sensors. Energy efficient compact fluorescent task lamps were placed on every workstation. "The need for individually controllable task lights was critical," explains project designer Natalia Martinez, LEED®-AP, "because lighting is dependent on the person's needs and what he or she is working on."

Since the workstations are only 48-in high, the task lamps had to meet the technical requirements of durability and of not being seen above the partitions. The selected product has only one hinged arm (the other hinge is at the light source) which, when angled, is not visible.

Lighting consultants Cline Bettridge Bernstein Lighting Design, Inc., created a 3-D computer model of the space to calculate lighting wattage used, color temperature and determine such questions as what color to paint the ceiling.

Visitors are welcome to take a tour of the space and learn about how the lighting strategies helped achieve energy efficiencies.

For lighting designs, we should not assume that two lamps with the same lumen rating will each give the same amount of light where needed.

Thirty years ago, standards of the Illuminating Engineers Society of North America (IESNA) called for general office lighting in the range of 100–150 footcandles (1,000–1,500 lux). Huge, increasingly cubicled floorplates, often without any natural, outside illumination, were lighted, for the most part, by banks of 4-ft, ceiling-mounted fluorescent troffers (recessed fluorescent fixtures) that, in too many cases, resembled stadium floodlights in their intensity.

By 2002, nearly all office tasks were being performed on desktop computers and average ambient light levels in the American workplace declined to one-third of 1970s levels. Today, ambient office lighting is likely to be in the range of 25–45 footcandles (250–450 lux), which is still far more light than is necessary for getting around the office or viewing a computer screen. According to IES, computers are best viewed in an environment where the ambient lighting is 5–10 footcandles (50–100 lux), whereas most reading of documents requires 20–50 footcandles (200–500 lux).

The Monitor—Document Conflict

“The demands of differing tasks within the workplace create an obvious conflict in lighting requirements,” says researcher Alan Hedge, PhD, CPE, Director of the Human Factors and Ergonomics Laboratory at the Cornell University Department of Design and Environmental Analysis. The majority of work that most office workers perform today is a combination of viewing a monitor and reading documents or other printed material. Yet these two tasks require significantly different levels of light because monitors are a source of light whereas paper reflects light. In fact, reading documents requires four to five times the amount of light needed for viewing a monitor.

If the ambient lighting level is set at the appropriate level for reading printed documents (20–50 footcandles), the lighting intensity will be much too high for proper monitor viewing (5–10 footcandles required). This leads to glare on the surface of the monitor, substantial energy waste and a variety of worker productivity issues. However, if the ambient lighting level is brought down to a point which is appropriate for monitor viewing and movement throughout the workspace, then there won’t be nearly enough light to read documents and other paper-based reading material.

The only solution to this conflict is to lower the overall ambient lighting levels and provide individuals with positionable task lights to properly illuminate the reading material on the desktop. In this way, both the monitor and documents can be lit to appropriate levels for the tasks being performed.

SmithGroup: Task Lighting Essentials

For Detroit-based SmithGroup, Inc., an A/E firm with its own in-house lighting design group, according to James Luckey, AIA, Senior Design Architect, a main goal with creating a nine-building campus in Van Buren Township, Michigan, for auto parts supplier, Visteon Corporation, was to attain “the absolute minimization” of energy costs. The first consideration was natural light. To allow as much light as possible into interiors, Luckey designed all of the 100,000- to 150,000-sq-ft buildings to be “…extremely narrow, 64 feet in width. We wanted this project to conform to the European standard, in which workers are never more than 10 meters from a window,” he said.

Exposures are large: sills of 15-ft-wide windows are only 2 feet off floors; headers are 10 feet above floor height; ceilings at 1-ft 6-in. We like, whenever possible, to push ceiling height,” says Luckey.

Ambient lighting, via indirect pendants (95 percent upward, 5 percent downward), centered in 20-ft ceiling bays, 30 inches beneath ceilings, is at 25 to 30 footcandles and blends perfectly with the distribution of natural light. The uniformly illuminated ceiling plane increases the sense of openness and maximizes the impact of the high ceilings.

For “sparkle,” SmithGroup used café and track lights. Each 50-sq-ft workstation has one adjustable compact fluorescent task light and one furniture-mounted fluorescent light capable of providing 50 footcandles where it is needed.

“The use of task lighting allows higher intensities only where that level of light is needed, while also providing the benefit of personalized control,” says Luckey. “In a computer environment, the goal is to minimize glare. This project,” he says, “is in keeping with what we try to do with every project. If ceilings are shallower, we have no choice but to put lights in the ceiling plane, but we prefer not to.”

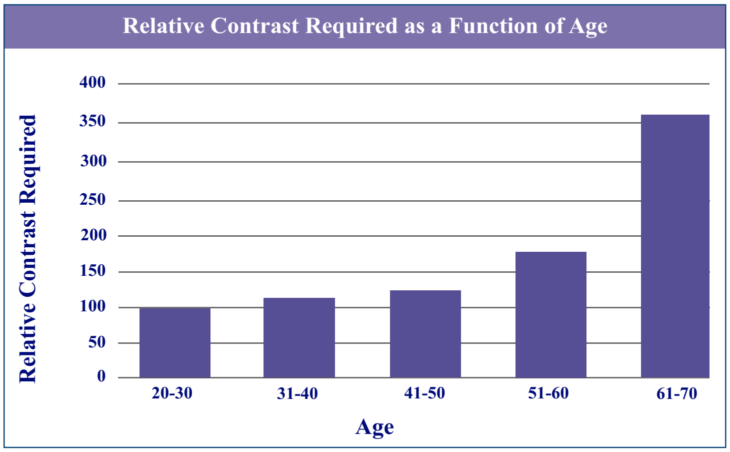
At Visteon’s new corporate campus, which opened in January 2006, workers have personal control over lighting within individual workstations; individual controls allow them to control floor-distributed heating and cooling as well.

“Overall, lighting consumption,” Luckey says, “is one watt per sq ft; lighting and miscellaneous power consumption, 2.25 watts per sq ft —the figure excludes air-handling.

Perhaps more importantly,” Luckey says, “ASHRAE 90.1 sets a standard of 94,842 BTUs (British thermal units) per square foot per year. Visteon Village consumes about 59,000 BTUs per square foot per year—a 37 percent energy reduction from the code allowance. That number includes under-floor heating and cooling consumption.”

Photo courtesy of Justin Maconochie Photography

The SmithGroup delivered 25 to 30 footcandles of ambient lighting for the Visteon Corporation Michigan campus.


Relative Contrast Required as a Function of Age

Lighting Needs Change As We Age

Equally significant to the fact that different tasks require different amounts of lighting is that actual lighting needs vary among individuals.

The older we get, the more light we need to see. Research indicates that the visual performance of those in their 20s is about eight times better than those in their 60s, almost four times better than those in their 50s. In fact, persons in their 60s require 250 percent more contrast than persons in their 20s.

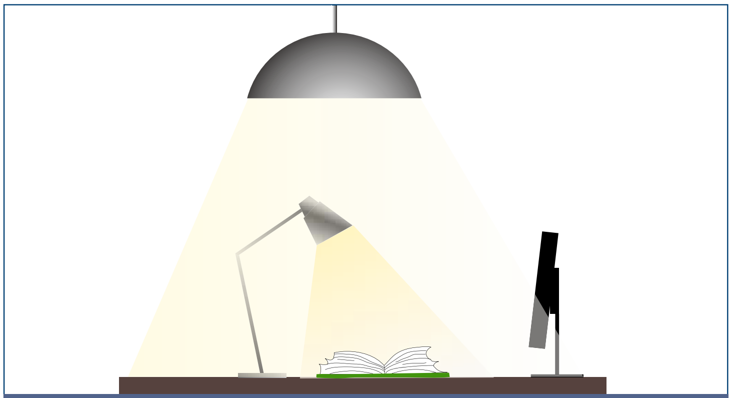
The increased need for light is due to a number of physiological changes in our visual system, which occur as we age. The term presbyopia means "old eye" and is a vision condition involving the loss of the eye's ability to focus on close objects. An additional symptom is the declining ability of the eye to receive light. Symptoms are usually noticeable by age 45 and continue to develop until the process stabilizes some 10–20 years later.

Eyestrain and accompanying headaches, which can result from working under inadequate illumination, are aggravated by aging. Eye fatigue may result in blurry vision and dim lighting aggravates the problem. Task lighting allows us to achieve the correct levels of illumination, regardless of the task or vision requirements, by changing the distance between the light source and the lit object—closer for more light, further away for less. It also allows us to correctly position the angle of light to eliminate glare and veiling reflections.

Bulb Options and Energy Effciency

Today's task lights utilize one of four types of lighting source: incandescent, halogen, compact fluorescent or light-emitting diode (LED or solid-state lighting), which works by running electricity through a chemical chip, causing the chip to glow. Compact fluorescents burn cooler and have proven to be more energy efficient than any other available task light source. A regular incandescent or halogen bulb works by heating a metal wire to a temperature at which it glows. This requires high temperatures, relatively large amounts of energy and creates a hot bulb surface. In fact, halogen bulbs can reach temperatures of 1800 degrees F and have, therefore, been banned from many university dormitories because of their risk as a fire hazard.

A compact fluorescent bulb is a low-pressure mercury, electric-discharge lamp in which phosphor coating transforms ultraviolet energy, created by electric discharge, into visible light. The fluorescent bulb remains much cooler and uses less energy than the other two, while providing the same amount of light.


Lower ambient lighting plus task lamp provides appropriate lighting for viewing computer screens and reading documents.

The first practical electric lamp, developed by Thomas Edison in 1879, converted less than one percent of electricity into light. Today's household incandescent bulbs convert 6–7 percent of their electrical input into light. The rest is wasted as heat. Classic 4-ft fluorescent systems convert approximately 19% of their energy into light.

Today's compact fluorescent lamps, five inches in length, or less, can be 50 times more efficient than Edison's original lamp and far more efficient than an incandescent light source capable of the same light out put. For example, a 13-watt compact fluorescent task light will produce the same light output as a 60-watt incandescent light, burn cooler and consume only one-quarter of the electricity.

Light Bulb Comparison Chart	Incandescent Bulb 100 W	Halogen Bulb 100 W	LED Bulb 60 W	Compact Fluorescent 26 W
Lumens Produced	1690	1900	1800	1825
Light Quality	White/Yellowish	Very bright, white light	Cool	Available from warm to crisp/cool
CRI	>90	>98	70-80	>80
Energy Consumption	100 W	100 W	60 W	26 W
Bulb Surface Temperature	500ºF	1800ºF	N/A	125ºF

Source: U.S. Department of Energy

LED Lighting

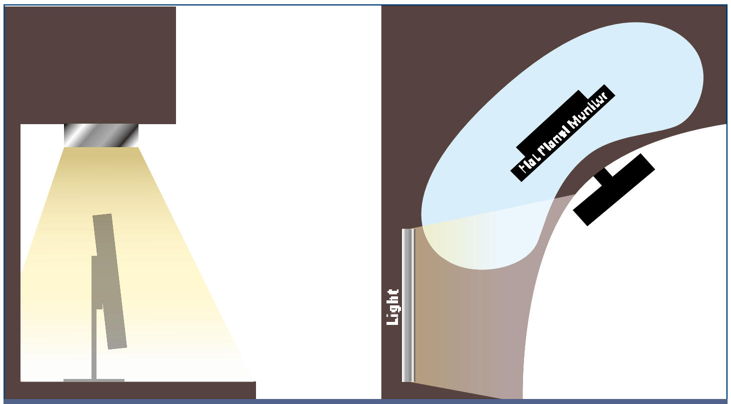
The next generation light source to make headlines is solid-state LED lighting. Around since the 1960s, it has only relatively recently been marketed for commercial interiors because of its apparent energy efficiency and other features. Approximately one-quarter-inch in diameter, each diode uses about one-tenth of a watt to operate and can be assembled together to deliver higher intensity light. LED fixtures require a plug-in transformer or a driver—typically built-in—which is comparable to the ballast in fluorescent fixtures. The plug-in transformer used for portable fixtures, enables the lamp to use 120 volt AC.

LED lights are more rugged and damage-resistant than compact fluorescents and incandescent bulbs. They do not flicker, are low maintenance, are dimmable and, what makes them especially attractive to those seeking LEED certification, have the potential of low energy consumption. Since they operate at 3,300 to 5,000 Kelvin (sunlight at

Light Source	Efficacy Range in lm/W
Incandescent	10-18
Halogen incandescent	15-20
White LED 3300K	17-34
White LED 5000K	25-43
Compact fluorescent (CFL)	35-60

Source: U.S. Department of Energy 2006

Recent U.S. Department of Energy research found compact fluorescent bulbs 50% to 100% more energy-efficient than LED bulbs.



Under-bin lights are not a suitable alternative to task lighting. Depending on workstation layout, they may put more light on the monitor than on documents and typically don't put light where paper-based work is being performed. They can also be a major source of glare.

sunrise is 1800K, overcast sky is 6500K) they have a "cool" color that ranges from blue to daylight fluorescent.

Many designers are now specifying LED lighting believing that it is the most energy efficient lighting solution available. Unfortunately, there is much misunderstanding surrounding this new technology. While there are considerable potential advantages to solid-state lighting, the technology is not sufficiently advanced to make it an energy efficient choice at present.

The major cause of misunderstanding results from there being no standard testing criteria. In their product literature, manufacturers use different evaluation criteria to compare their LED products with traditional fluorescent or incandescent lighting. Another difficulty in testing existing LED luminaires is their susceptibility to colorshift and inadequate performance when subject to high heat (some manufacturers have added fans and diffusers to disperse heat.)

After a pilot round of testing several LED products, the U.S. Department of Energy released its conclusions in December 2006. It found that products fell short of manufacturers claims and implied that claims are based on how much light isolated LED produces rather than how much light an LED fixture actually delivers. The study concluded that "solid-state based luminaires (lighting lamps or fixtures) have the potential to provide high-quality light which consumes far less energy than more traditional lighting technologies, but recent testing of commercially available products show that some being sold today actually provide less light output than traditional light sources and are less efficacious than products using fluorescent light sources."

U.S. Department of Energy testing found that LED bulbs with a temperature of 3300K are about half as energy efficient as standard compact fluorescents (17-34 lumens/watt versus 35-60 lumens/watt for compact fluorescents). Higher temperature LED bulbs (5000K) were somewhat more efficient, but still well below the efficiency of CFLs. Moreover, LED bulbs are not ideal for task lighting because the color is too cool (blue) for most users. In other words, LED products now on the market use more energy and provide less light than their compact fluorescent counterparts.

Meanwhile, researchers are addressing the issue of testing criteria and comparison methods. "We have developed technology-neutral, fixture-based testing methods that allow fixtures of the same type but with different light sources to be compared appropriately," says N. Narendran, Ph.D. of the Lighting Research Center at Rensselaer Polytechnic Institute and director of research and organizer of the Alliance for Solid-State Illumination Systems and Technologies (ASSIST).

At some point, perhaps in another two to three years, LEDs will overtake CFLs in efficiency because LED technology is improving. But for now, CFLs are clearly the best solution in terms of energy efficiency.

Task Lighting Saves Eyes

Because they are closer to the work surface, positionable task lights are a considerably more effective means of lighting a desktop than are overhead fixtures, which are costly and inefficient. They can be directed to light documents or moved to avoid screen glare.

"The most common design error, clearly, is the mismatch between where light is being delivered and where people are utilizing that light," says Alan Hedge. "All too often we put light into a building without knowing the ultimate layout. Even if the layout is known, things can happen that are not foreseen. Offices may be partitioned differently by new tenants, for instance, and the new layout can result in a feast or famine situation, so far as light is concerned. Some workers may complain of glare and headaches; some may be in the dark."

In a study conducted in 1990, Cornell researchers drew on an American Society of Interior Designers survey in which 68 percent of employees complained about the light in their offices and 79 percent of VDT users wanted better lighting. The Cornell study came to the conclusion that eyestrain was the number one health hazard in the workplace—ahead of radiation, asbestos, or exposure to AIDS.

Hedge says eyestrain remains the number one complaint in the office environment, and the degree of dissatisfaction is difficult to ignore. It confirms the need to identify the best available methods of lighting. "Combined ambient-task lighting is likely to be the most effective solution in any environment in which workers are doing both paperwork and computer work," says Hedge. ■

This article continues online at
http://construction.com/CE/articles/0711humanscale-1.asp

See Quiz on the Next Page

To receive AIA/CES credit, you are required to read the additional online text, which can be found at **http://construction.com/CE/articles/0711humanscale-1.asp**
The quiz questions below include information from this online reading.

Program title: **"Task Lighting Solutions: Their Economic and Ergonomic Benefits" (11/07, page 184A).** AIA/CES Credit: This article will earn you one AIA/CES LU hour of health, safety, and welfare credit. (Valid for credit through November 2009). **Directions:** Refer to the Learning Objectives for this program. Select one answer for each question in the exam and fill in the box by the appropriate letter. A minimum score of 80% is required to earn credit. **To take this test online, go to construction.com/CE/**

Learning Objectives

After reading this article, you should be able to:

- Evaluate office lighting design for effective work environments.
- Recognize the importance of incorporating task lighting into an overall lighting plan.
- Identify the environmental, economic and human factor benefits of task lighting.

Questions

1. Using positionable task lighting in addition to low ambient light can lead to:
☐ **a.** improved comfort and control for workers.
☐ **b.** energy waste.
☐ **c.** emotional and physical discomfort for office workers.
☐ **d.** increased glare on computer screens.

2. Illuminance:
☐ **a** tells us how much light will reach a given surface.
☐ **b.** describes the total amount of light given off by a bulb.
☐ **c.** is measured in lumens.
☐ **d.** is a representation of the amount of light seen by the eye.

3. Optimal illuminance for computer use is:
☐ **a.** 25 to 45 footcandles
☐ **b.** 5 to 10 footcandles.
☐ **c.** 20 to 50 footcandles.
☐ **d.** 10 to 20 foot candles.

4. Visual performance of persons in their 20s is how many times better than those in their 50s?
☐ **a.** Eight
☐ **b.** Four
☐ **c.** Three
☐ **d.** Six

5. Today's household incandescent bulbs convert what percentage of their electrical input into light? :
☐ **a.** 6 to 7 percent
☐ **b.** 3 percent
☐ **c.** 19 percent
☐ **d.** 28 percent

6. A 13-watt compact fluorescent task light will produce the same light output as a:
☐ **a.** 100-watt incandescent bulb.
☐ **b.** single solid-state LED light.
☐ **c.** 60-watt incandescent light.
☐ **d.** 150-watt halogen bulb.

7. Which task lighting bulbs on the market are the most energy efficient?
☐ **a.** Incandescent
☐ **b.** Solid-state LED
☐ **c.** Compact fluorescent bulbs
☐ **d.** Halogen

8. Solid-state LED products:
☐ **a.** have undergone a standard means of performance testing.
☐ **b.** are not subject to change under high heat.
☐ **c.** tested by the U. S. Department of Energy used far less energy and provided more light than traditional light sources.
☐ **d.** tested by the U.S. Department of Energy used far more energy and provided less light than traditional light sources.

9. Lighting may contribute to LEED® points by:
☐ **a.** meeting energy use requirements for varying percentages below ASHRAE 90.1–2004 standards.
☐ **b.** specification of recyclable products.
☐ **c.** providing task lighting to 90 percent of employees.
☐ **d.** All of the above

10. Color Rendering Index (CRI) of a bulb:
☐ **a.** should always be 100.
☐ **b.** refers to its cool or warm appearance.
☐ **c.** refers to how colored objects appear.
☐ **d.** is the first consideration before selecting a bulb.

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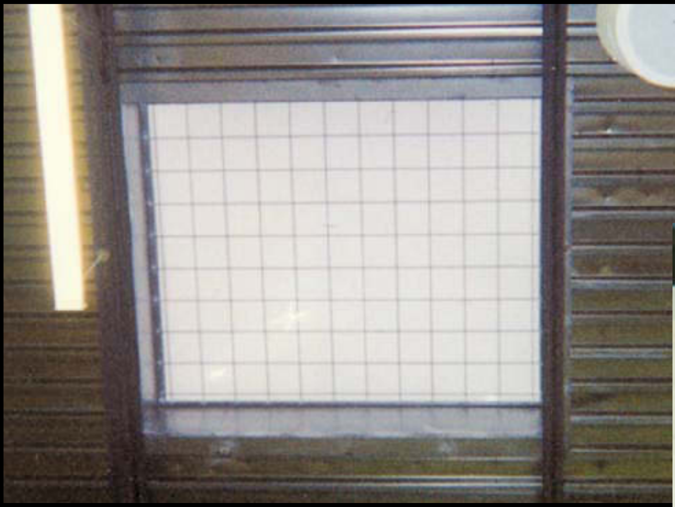

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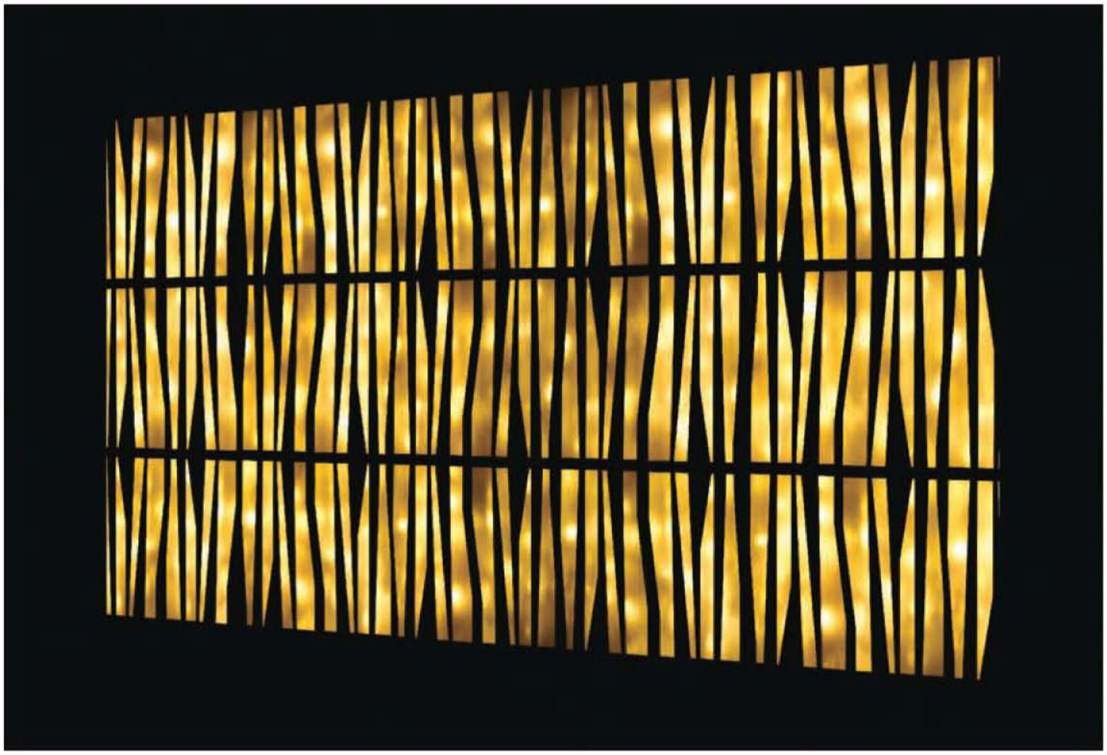

Silvus

Designed by Roger Duffy of SOM

Interior and exterior lighting fixture

The modularity of this 24"x13" luminous element allows for a wide range of applications—single unit, group or field.

Its LEDs and carved inner surface evoke the gentle motion of light across water, filtered by foliage.

Various options are available for LEDs and finishes.

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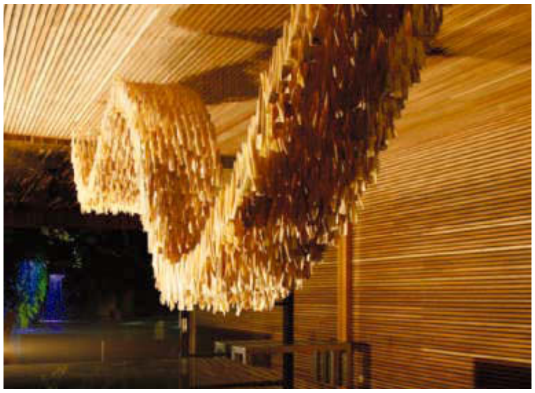
Lighting

Small projects leave an enlightening impression

The Sentosa Resort installation is composed of 3,000 cow bones collected from nearby meat markets.



When the self-taught architectural designer Rob Sample invited Eva Menz to make one of her popular origami chandeliers for Sentosa Resort in Seminyak, Bali, he warned that the budget was tight. Menz, who does pro bono design collaborations with local communities all over the world, offered to take the job as part of that commitment: She would produce a completely new luminaire with 24 college-level Indonesian design students and accept reimbursement only for her costs.

Menz says she traveled to the hotel site without any preconceived notions and didn't know what she was getting into. Indeed, she was arrested for making clay models without a work permit, the tropical humidity destroyed a prototype made of natural fibers, and the exhausting heat delayed work. A three-week December 2006 trip turned into two months.

But along the way, Menz picked up a few words of Bahasa and several important cultural insights. In particular, she learned that the island's practice of Hinduism was more informal than in other parts of the world. "It's a unique branch of the religion. They're not as strict about certain things," Menz says. "The cow is holy, but it's not completely untouched as it is in India. Muslims and tourists eat it, so the animal is killed." Students returned from a material-gathering exercise with knife handles and jewelry that craftsmen had carved from the leftover bones.

In developing countries, design education usually emphasizes technical skill over creative expression, so Menz organized the Sentosa project to "get students to look into their culture," she explains. "The whole idea was to show what they have rather than inserting something we have."

The result was *Reincarnation of the Sapi*, a permanent installation in the resort's 860-square-foot art gallery (above). Three thousand thigh bones from the native sapi cow were salvaged from meat markets, cleaned and polished, then suspended from transparent wires in a wave formation. The serpentine configuration of the components contrast with the orthogonal lines of the Sample-designed gallery, and the bones' various white hues stand out against the teak floor, walls, and ceiling and the polished black-glass table sitting beneath the intervention.

The work changes character throughout the day. Ambient daylight bathes it in a warm glow, while at night, halogen spots differentiate each of its 3,000 parts. It also has changed the students who helped build it and the people who see it every day. "When we were doing this piece, some of the staff at the hotel were against it," Menz recalls. "We explained that we're creating a piece that worships the cow bones rather than disposes of them. Eventually, a lot of the staff felt differently. Deeply religious people were open to a new perspective."

The six projects featured in this month's Lighting section share traits with *Reincarnation of the Sapi*. Each is small in scope: a restaurant ceiling, the balustrade of a bridge, an installation growing from a sidewalk, or one dangling from a ceiling. Each also delivers a memorable element of surprise, delight, or wonder.

At the Billy Wilder Theater at UCLA's Hammer Museum, Michael Maltzan Architecture and Lam Partners express Hollywood thrills by arranging LED luminaires on the ceiling to suggest a starship zooming through galaxies. In Washington, D.C., the interactive piece *Lo Rez Hi Fi* transforms a sidewalk into a catalyst for social engagement. And in Manhattan, Australian studio Korban/Flaubert inserted a scramble of illuminated tetrahedra into the Diesel Denim Gallery, compelling buyers to squeeze around the installation as they would into a pair of jeans. These projects show that lighting can not only make an environment more beautiful, but also lend insight to our everyday lives—perhaps changing minds in the process. *David Sokol*

ONLINE: Rate these projects and access additional sources at ***architecturalrecord.com/lighting/***.

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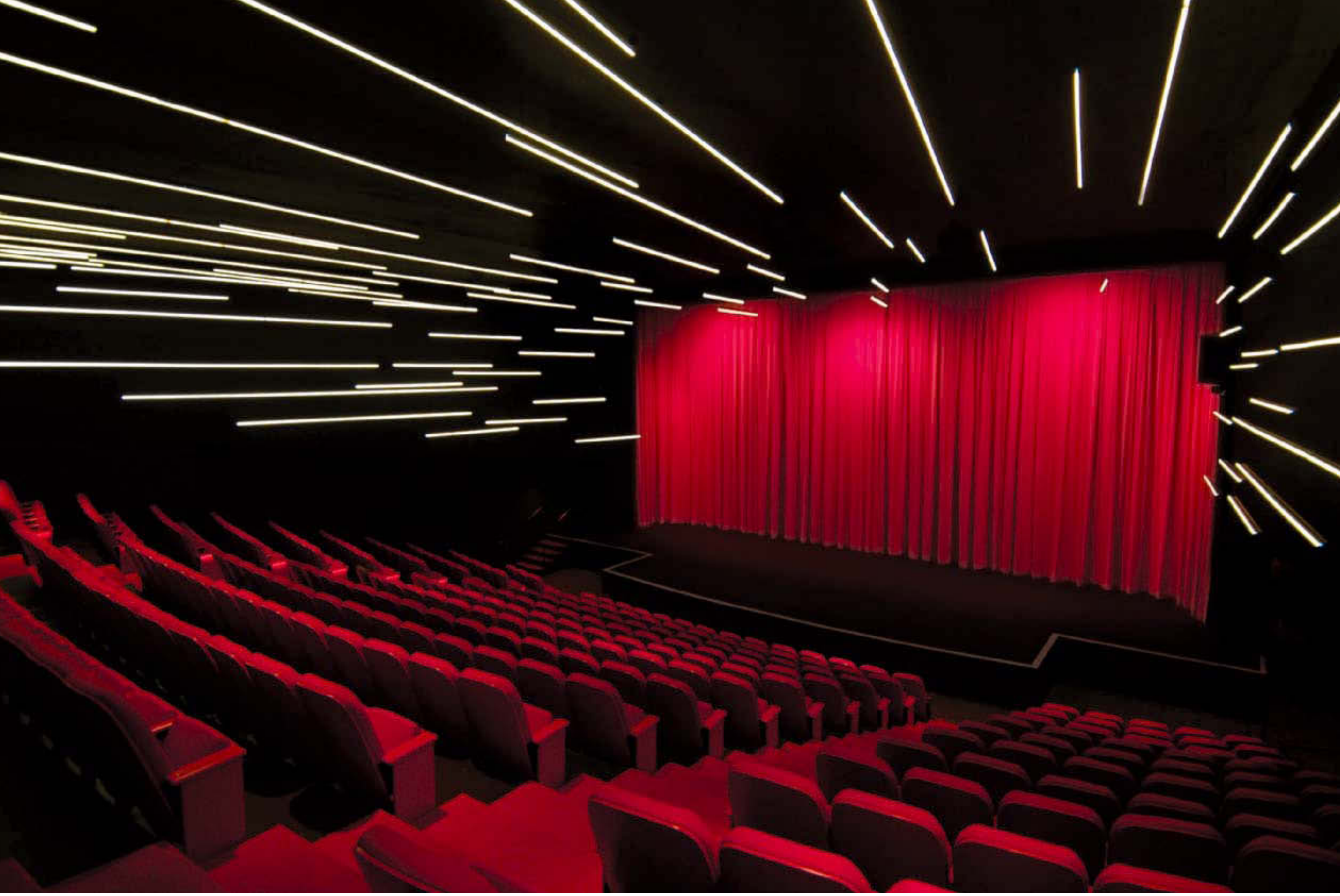
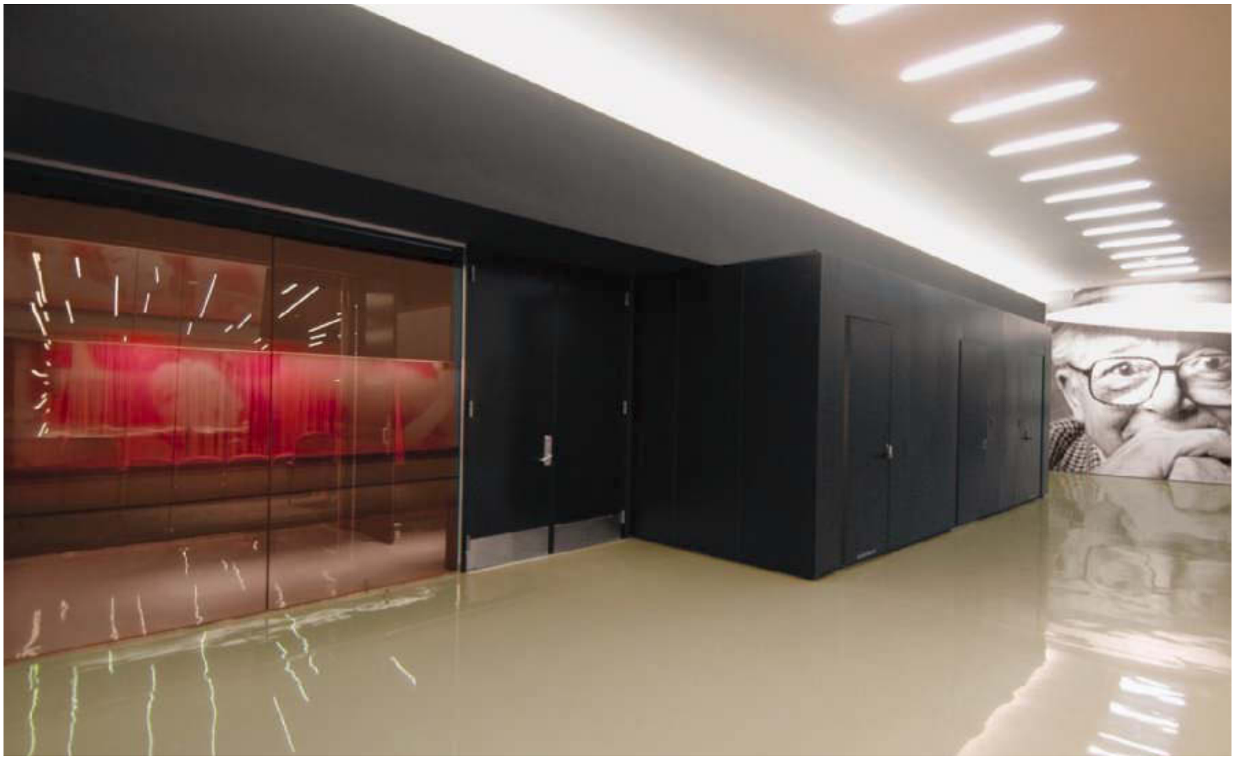
PHOTOGRAPHY: COURTESY EVA MENZ

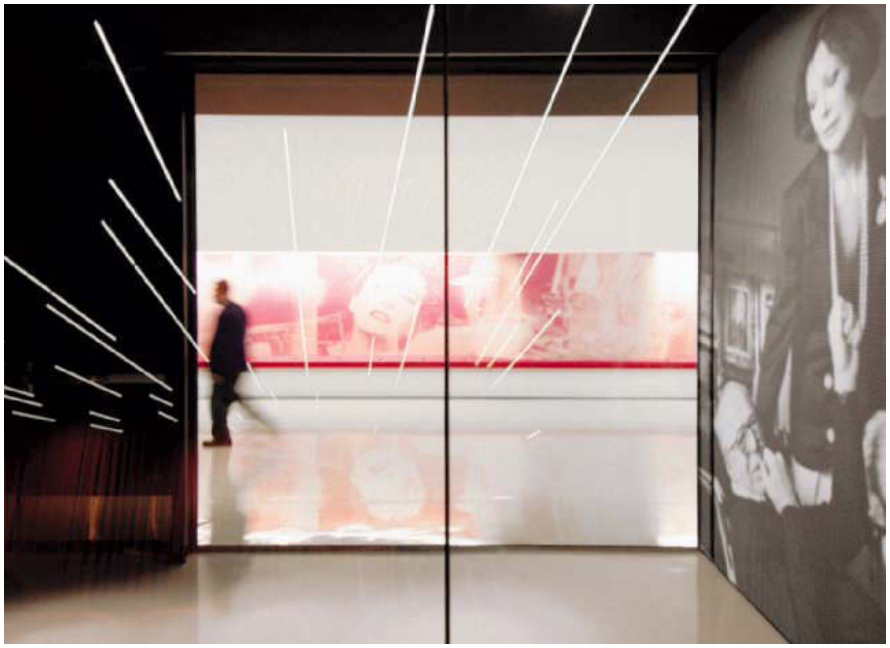


Seemingly afloat, the glowing LEDs actually clip onto thin struts, painted black (above). As one curtain opens onto the movie screen, another closes over the theater's glass back wall (right), helping adjust the room's acoustics and lighting for the film.



Casting light as a metaphor for film, Michael Maltzan and Lam Partners animate the **Billy Wilder Theater**

By Sarah Amelar



Through the theater's glass back wall, the lobby appears with its photomural and glossy epoxy floor (above).

Like shooting stars against a night sky—or a glowing game of pick-up sticks—thin rods of white light dynamically charge the black-box auditorium of the Billy Wilder Theater in the Hammer Museum at UCLA. These LED rods, hovering beneath the ceiling with barely visible means of support, don't literally move, yet they generate an immediate sense of velocity, as if streaking by. "The idea," says the architect, Michael Maltzan, FAIA, "was to transport you experientially from the world outside, much as the old movie palaces did—but in a more contemporary way—before you're spirited away by the film itself."

The $7.5 million theater—named for the Academy Award–winning screenwriter and director of *Sunset Strip* and *Some Like It Hot* and made possible by a $5 million gift from his wife, Audrey Wilder—provides a cinematèque for UCLA's Film & Television Archive. With cutting-edge as well as rare, archaic technologies, the 295-seat screening room presents the full historical range of motion pictures in the original formats: from silent footage with variable-speed projection to highly combustible nitrate film (requiring a fire-shuttered booth) and state-of-the-art digital video.

Capturing the spirit of movies, but without the clichés, Maltzan envisioned the theater's radiating strips of light as a metaphor for film. But the screening room, which doubles as a lecture and small performance hall for the Hammer, is just one key and dramatic component in the architect's larger, yet-unrealized master plan to remake and reprogram the museum's entire 1990 Edward Larrabee Barnes–designed building.

To give the existing, "otherwise-opaque structure transparency and translucency, we had to make sense of the spaces without adding lots of signage," says Maltzan. "The overall lighting scheme needed to provide the 'breadcrumbs' that guide you." Working closely with lighting consultant Paul Zaferiou of Lam Partners to create stronger visual connections both internally and with the museum's surroundings, the architect introduced daylight in key locations and developed a language of long, linear fluorescents, some behind glass, others in front of it, many in striped configurations. In the theater lobby, for example—a space dominated by lenticular photomurals of Wilder and his work—semirecessed, bare T6 fluorescent lamps without end caps (the contact pins lie on the back side of each tube) hover overhead like a procession of elegantly luminous railroad ties.

"You come from this regular pattern into the theater, where the lines of light seem to accelerate randomly through space," as Maltzan describes them. Though he considered using neon here, Lam convinced him instead to install 3500K LED sticks, which come in 4- and 8-foot lengths and can be butted together end-to-end. With the LED dots diffused by a tubular, bullnosed acrylic casing, these glowing rods appear as pure, crisp lines of light. The advantages of LED over neon, explains Zaferiou, include easy installation, extreme light weight, low-voltage wiring, absence of buzzing or other noise, minimal maintenance, color consistency, and tube ends that appear as pure points of light. Also, he suggests, such innovative technology sends exactly the right message for a leading-edge venue.

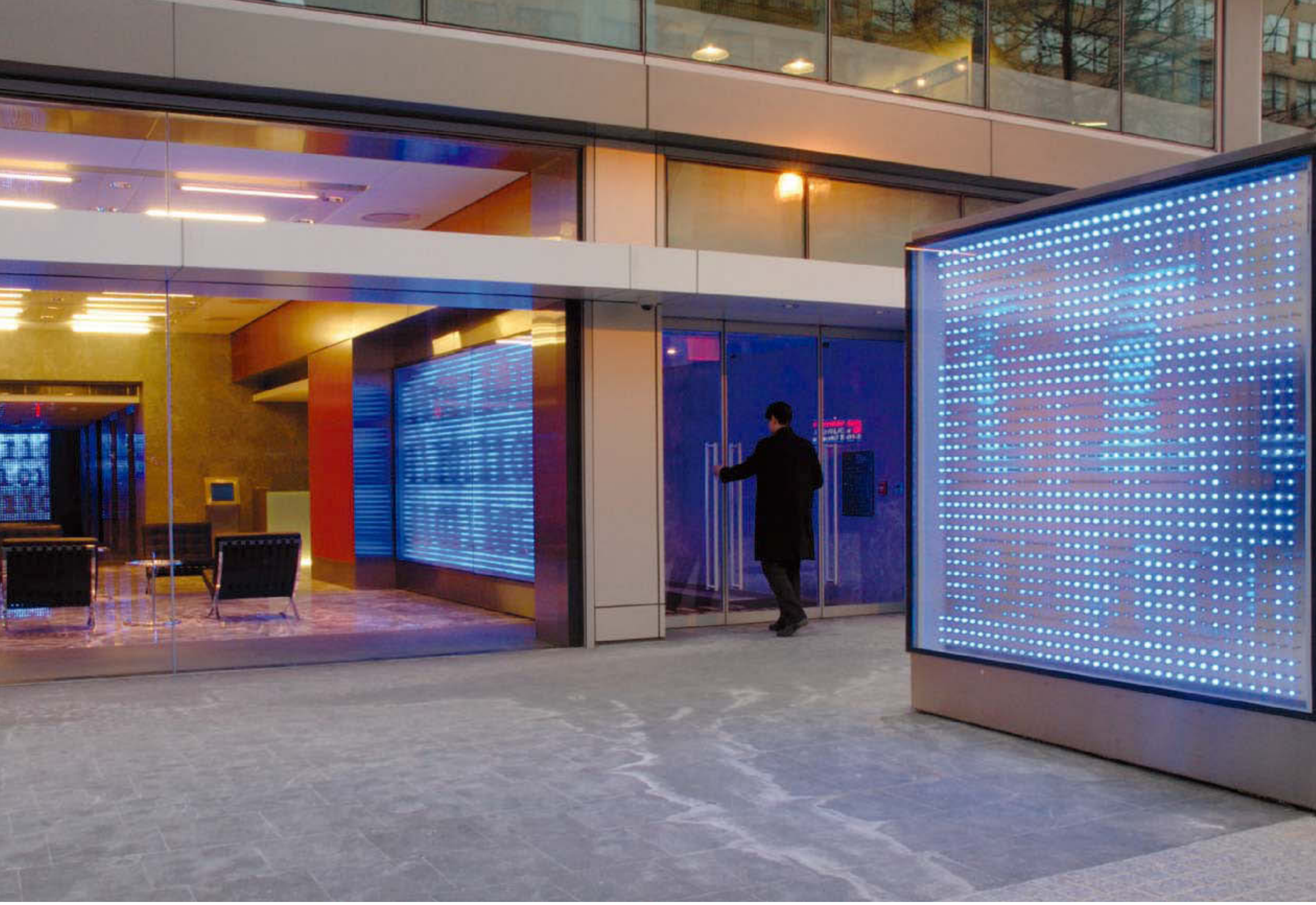
Seemingly afloat, the 128 LED strips clip into almost invisible supports: thin struts, painted black, that stem 6 to 18 inches off the black walls and ceiling, virtually disappearing into darkness. (The fixtures are wired to remote transformers behind accessible wall and ceiling panels.) The luminous rods have a spectacular presence not only against the contrasting backdrop, but also above the seating's deep-raspberry leather upholstery, chosen to evoke luxury in the spirit of great movie palaces.

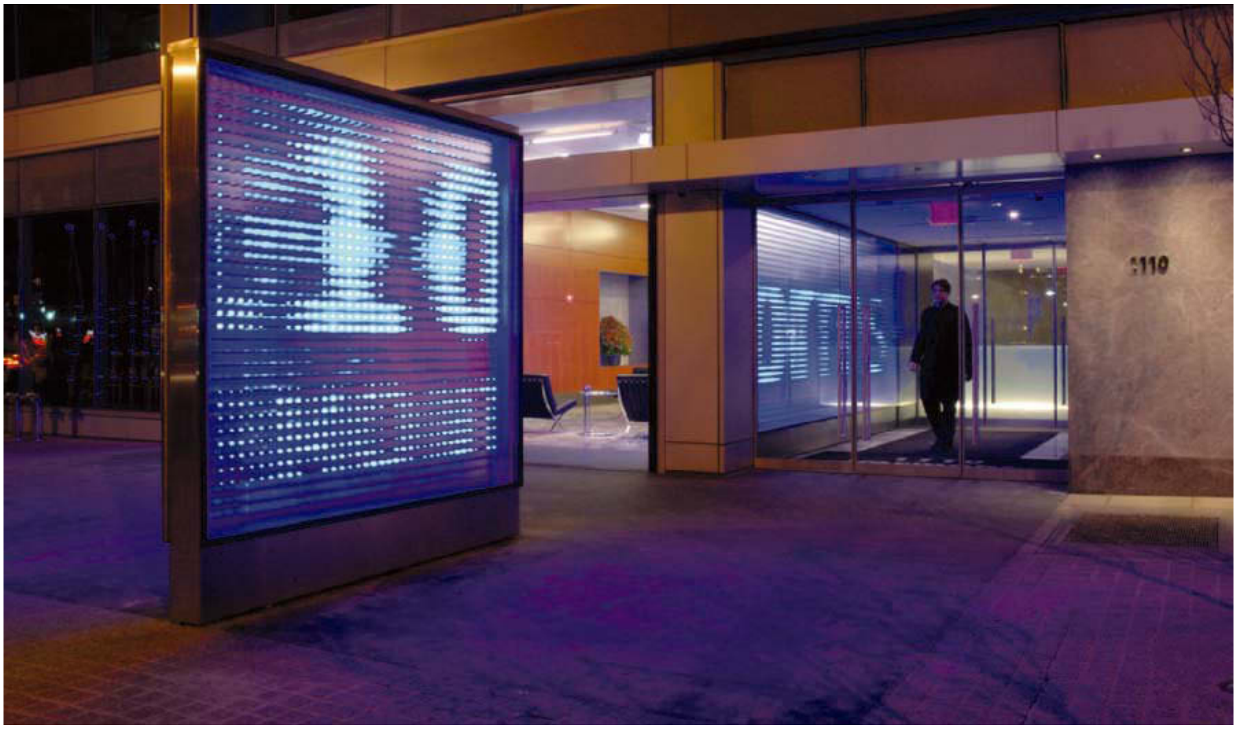
Though the theater has a "supporting cast" of subtle yet purely practical lights—spot or accent fixtures for lecturers on stage, dimmable recessed halogen house lights, a motorized floodlight for the stage, as well as egress and emergency illumination—the real stars are the "flying" LED sticks. A dimming system for the various fixtures, programmed with 16 preset scenes, helps transform the space to its different uses and transitional modes or moods. But most dramatically of all, in the moments just before a screening begins, the LEDs, set on 12 dimmers at varying intensities, fade from front to back of the theater, "as if," Zaferiou suggests, "sucking the light back into the projector." ■

Project: *Billy Wilder Theater, Hammer Museum, UCLA, Los Angeles*
Architect: *Michael Maltzan Architecture—Michael Maltzan, FAIA, design principal; Stacy Nakano, Tom Goffigon, project managers*
Lighting designer: *Lam Partners*

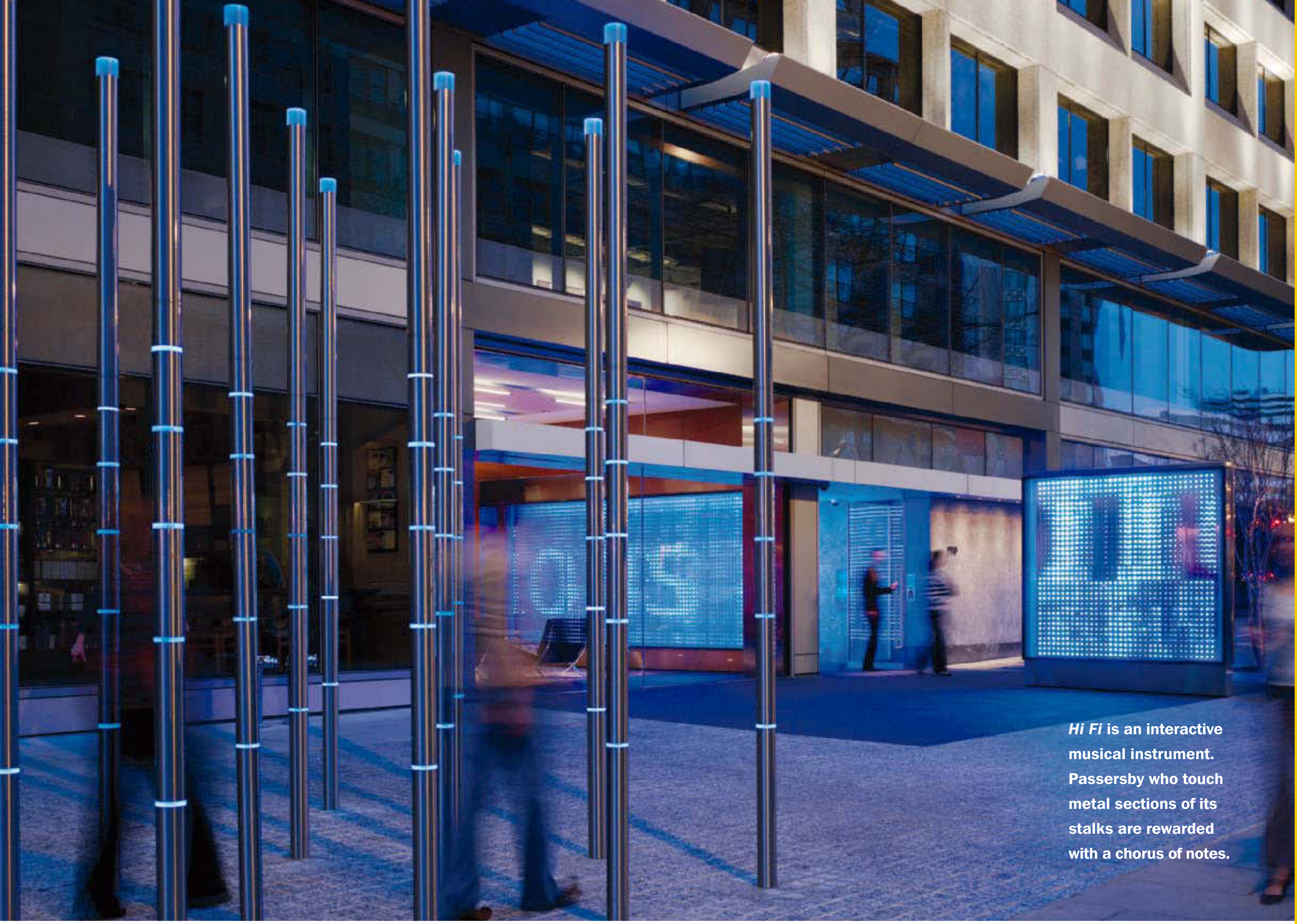
Sources
Lighting: *iLight Technologies (LED Plexineon in theater); Nippo Electric (Seamlessline T6 fluorescents in lobby); Robe ColorWash (stage floodlight); Edison Price; Cole; Focal Point; Selux; Lighting Services; Kurt Versen; Ledalite*

PHOTOGRAPHY: © WIL CARSON





***Lo Rez* continuously streams "1110," the building's street number, overlaid with low-resolution images of sidewalk activity captured by the building's security cameras.**



Hi Fi **is an interactive musical instrument. Passersby who touch metal sections of its stalks are rewarded with a chorus of notes.**

MY Studio/Höweler+Yoon Architecture's *Lo Rez Hi Fi* gives a D.C. building a much-needed sense of place

By Charles Linn, FAIA

Spec office buildings in downtown Washington are so uniformly bland that one wonders whether the city has been forcing developers to follow 1960-issue GSA building standards for the past 47 years. Anonymity worsens at night when the characteristics that differentiate the light beige precast exteriors from the light gray ones vanish, leaving ill-at-ease pedestrians in a monochromatic moonscape.

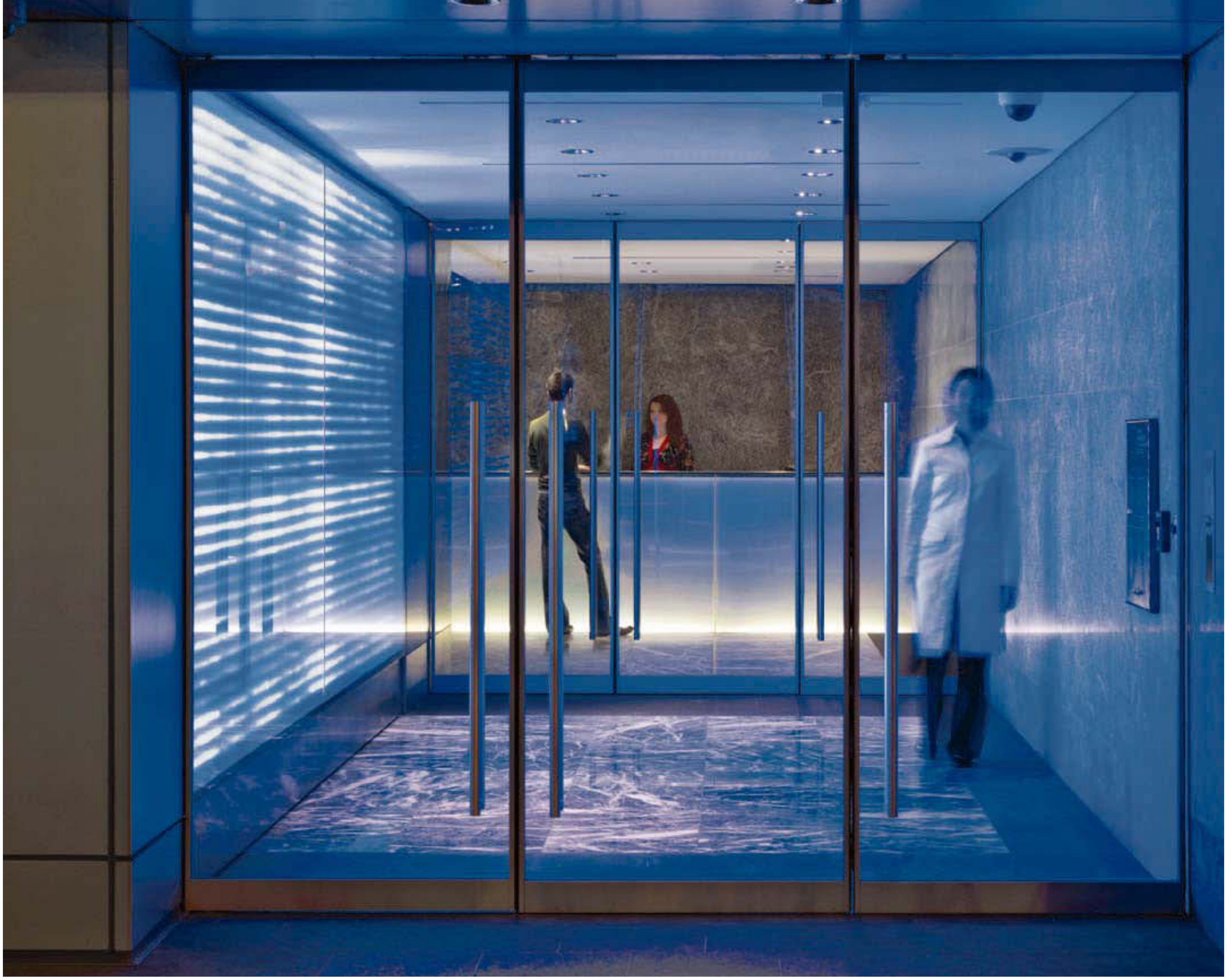
1110 Vermont Avenue sits in the middle of a block of such buildings, and the advantages of having the property stand out—attention, happier tenants, higher rents—were not lost on its owner, Abbott Stillman. He hired STUDIOS Architecture to renovate it, and sought a way of bringing to its entry a sense of identity. When he saw *White Noise/White Light*, an interactive installation in Athens, Greece, that combined light and sound, he contacted its creators, Meejin Yoon and Eric Höweler.

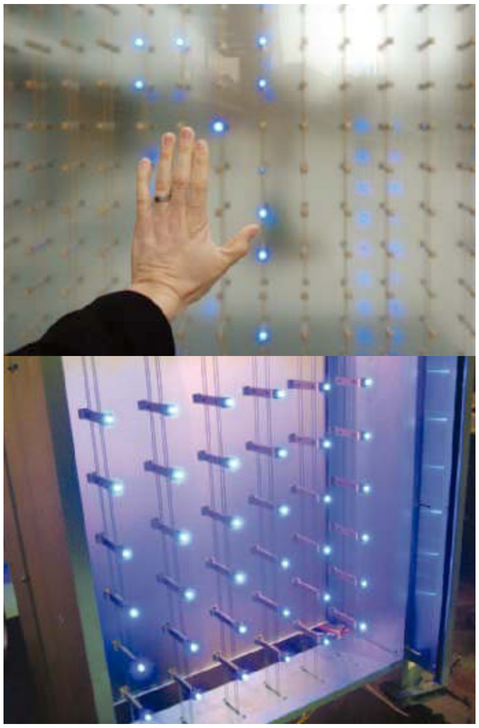
"I got an e-mail from him out of the blue," Yoon says, and the two of them began to conceptualize a two-part permanent installation called *Lo Rez Hi Fi*. The *Lo Rez* portion of the work is an electronic sign comprising a pair of two-sided screens made of 10,000 individually controlled LEDs. The lamps are affixed in pairs to tensioned cables placed 2.4 inches apart and suspended between glass panels, etched to diffuse the light. One of these screens is installed inside in the building's entry; the second is aligned with it on the sidewalk. A controller turns individual LEDs on or off in sequences that, when viewed from a distance, form moving images. They stream "1110," the building's address number, and

---

Project: Low Rez Hi Fi
Client/Collaborator: *Abbott Stillman*
Owner: *Perseus Realty and The Stillman Group*
Designer: *MY Studio/Höweler+Yoon Architecture—J. Meejin Yoon, Eric Höweler, AIA, Carl Solander, Lisa Smith, Meredith Miller*
Architect of record: *STUDIOS Arch.*
Electronics engineer/fabricator: *Will Pickering, Parallel Development*
Sound composer: *Erik Carlson, Area C*

PHOTOGRAPHY: © MEEJIN YOON (OPPOSITE TWO); ALAN KARCHMER (THIS PAGE)





The nets of LEDs created for *Low Rez* are mounted inside vitrines of lightly etched glass. A different display can be shown on each side of the sign, because each side has its own set of individually controlled LEDs.

may be mixed with images of sidewalk activity captured by the building's security cameras.

The second component is *Hi Fi*, a grid of sidewalk-mounted poles that Yoon describes as "stalks." Each is divided into segments of stainless steel separated by thin LED-illuminated rings. Composer Erik Carlson gave each segment a distinct note or sound sample that plays when touched. They are networked to create a "sound grove." When a person touches a segment, its assigned sound plays and pauses; then a related sound from another stalk elsewhere in the network plays, it is answered by another note elsewhere, and so on. Passersby can make music with *Hi Fi* and see themselves on *Lo Rez*. Both parts of this installation required Will Pickering and his company, Parallel Development, to design custom programmable controllers and circuit boards, which were assembled with the designers' help. "We did a lot of soldering," Höweler says.

The ground floor of 1110 Vermont has been leased to two restaurants and a Starbucks, proving Stillman's hunch that brightening the block's dark mantle would pay off. "He saw the development potential of the building," says Yoon, "but was also extremely concerned that *Low Rez Hi Fi* really engage the public space. This was not a percent-for-art project, so he had no requirement to do something creative." ■

Readers can see videos of Lo Rez Hi Fi *and other projects by MY Studio by going to youtube.com and doing a search for the term* eholweler.

PHOTOGRAPHY: © ALAN KARCHMER (TOP); MEEJIN YOON (BOTTOM TWO)

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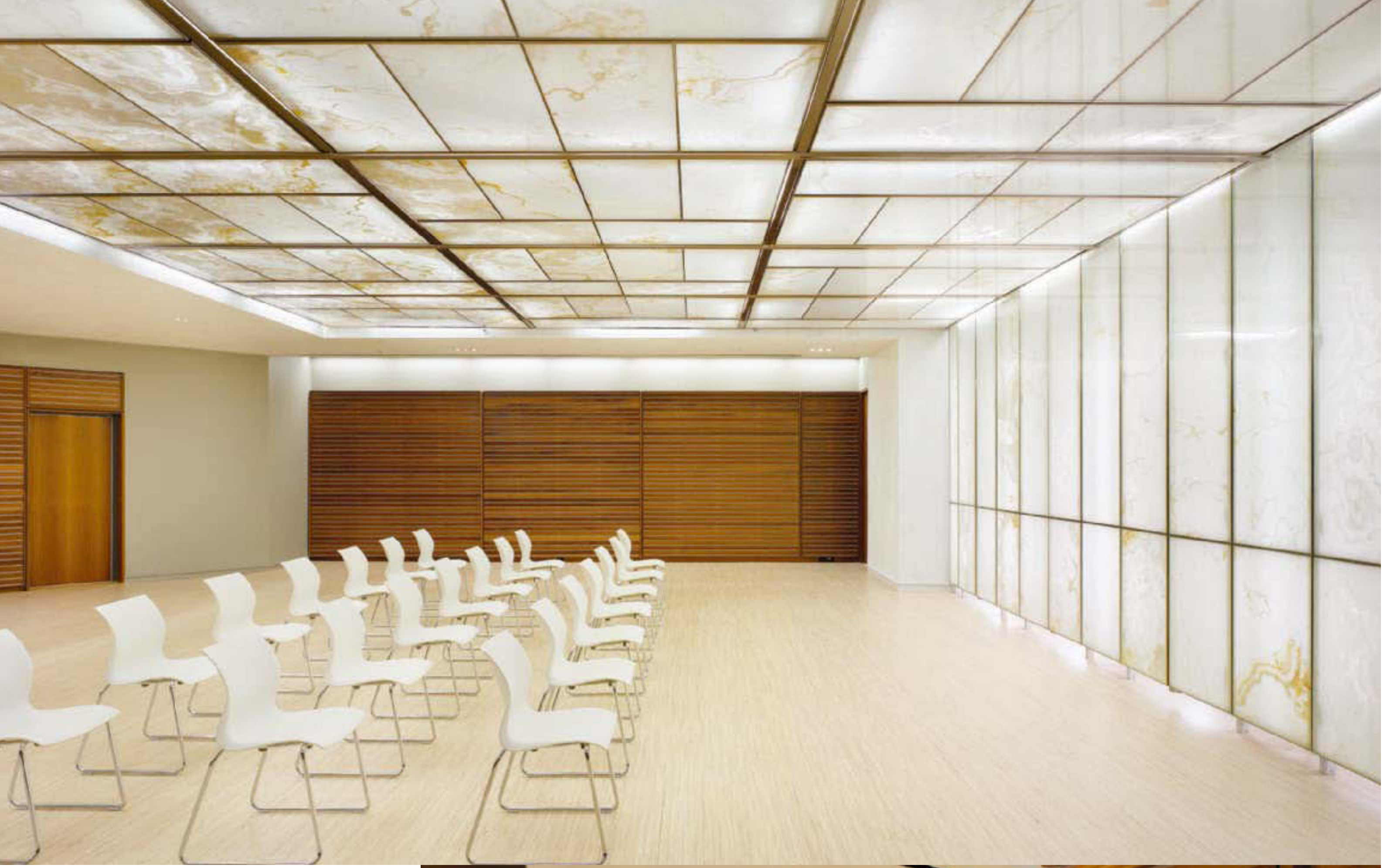
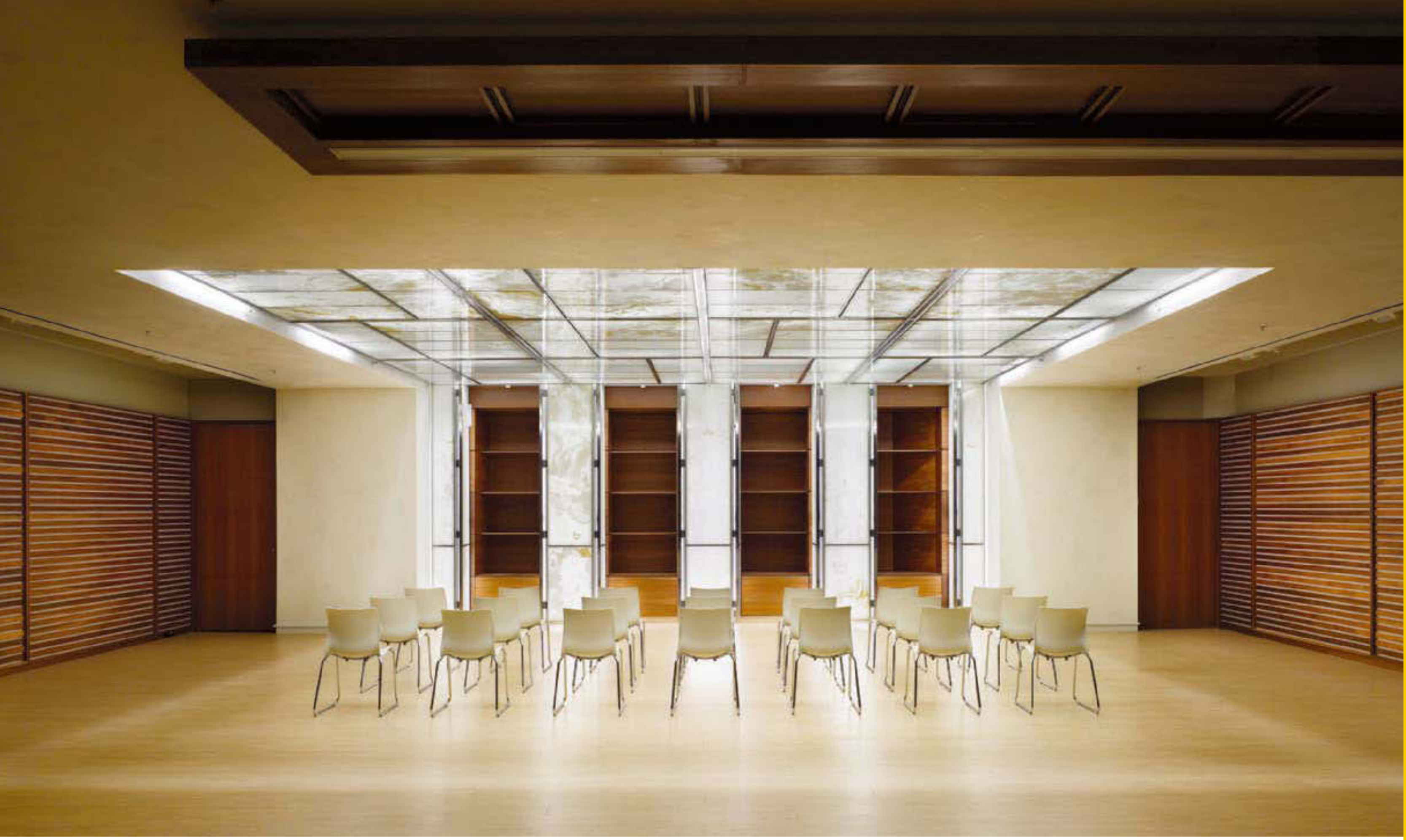


Onx panels adorn the ceiling and eastern wall of the Multifaith Centre at the University of Toronto. The semi-precious stone's ochre veins harmonize with the room's bamboo floor and the sapele wood that clads the storage alcoves.



A school's **Multifaith Centre** has semiprecious appeal

By Jenna M. McKnight

While Foster + Partners was building a new home for the University of Toronto's pharmacy school [RECORD, May 2007, page 278], the university commissioned Moriyama & Teshima to transform the 25-year-old building that the pharmacy school had just vacated, converting the sacred halls of academe into a spiritual center for the university community. This multifaith center, completed in January, includes an ablution area, kitchen, meditation and multipurpose rooms, and offices.

The project's centerpiece is an 1,800-square-foot, 200-person prayer room assembled from two former lecture halls. But even a higher calling has limitations—in this case, a ban on religious icons associated with any particular faith, a $1.4 million budget for the entire center, and a requirement by the university to use fluorescent lamps to save energy. Furthermore, the front of the room had to face east to Mecca, even though this wall was windowless.

Using light as a transcendental yet faith-neutral motif, the design team devised a technically astute and visually breathtaking solution. It combined two triangular classrooms and dedicated the eastern wall of the new square volume to a quiltlike configuration of sliced onyx laminated to sheets of tempered glass and backlit by T5s. The ochre-veined, white onyx also lines the ceiling, with pieces increasing in translucency as they approach the eastern wall, pulling occupants' focus to the front of the room. The L-shaped feature measures 861 square feet.

The architects considered other materials, such as Japanese paper and cast glass, before deciding on Iranian onyx. "We wanted something that was a natural material," says Jason Moriyama, a principal of the Toronto-based architecture firm. "The white onyx suggests land forms or clouds or heaven. It helps contribute to the ethereal quality of the space."

The room is equally pragmatic, with the front wall containing four hidden storage alcoves where groups can keep scrolls, figurines, and other religious objects. For the ceiling, the team moved all mechanical systems to the periphery, so "you don't see a sprinkler head or diffuser popping through," Moriyama says. Despite their delicate appearance, the onyx-glass panels overhead weigh more than 2,000 pounds and are suspended using steel hangers bolted into concrete. Hidden within this system, fluorescent lamps face a white painted upper ceiling to diffuse the light. In the remainder of the room, wood paneling absorbs noise and Venetian plaster evokes the hand-troweled finishes of old cathedrals and mosques.

Moriyama attributes the room's popularity to its nonexclusive and serene atmosphere. "I think it's been successful because faith groups can interpret it in their own way. It has meaning for all of them." ■

Project: *University of Toronto Multifaith Centre for Spiritual Study and Practice, Toronto, Canada*

Architect: *Moriyama & Teshima—Jason Moriyama, partner in charge; Carol Phillips, project architect; Phil Silverstein, job captain*

PHOTOGRAPHY: © TOM ARBAN

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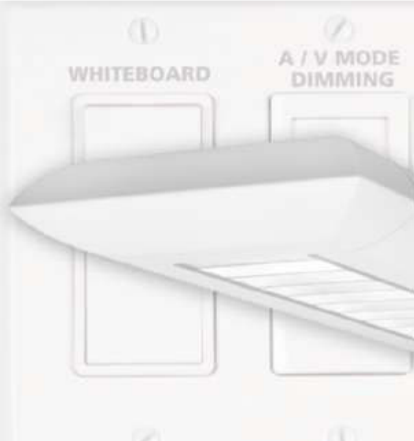

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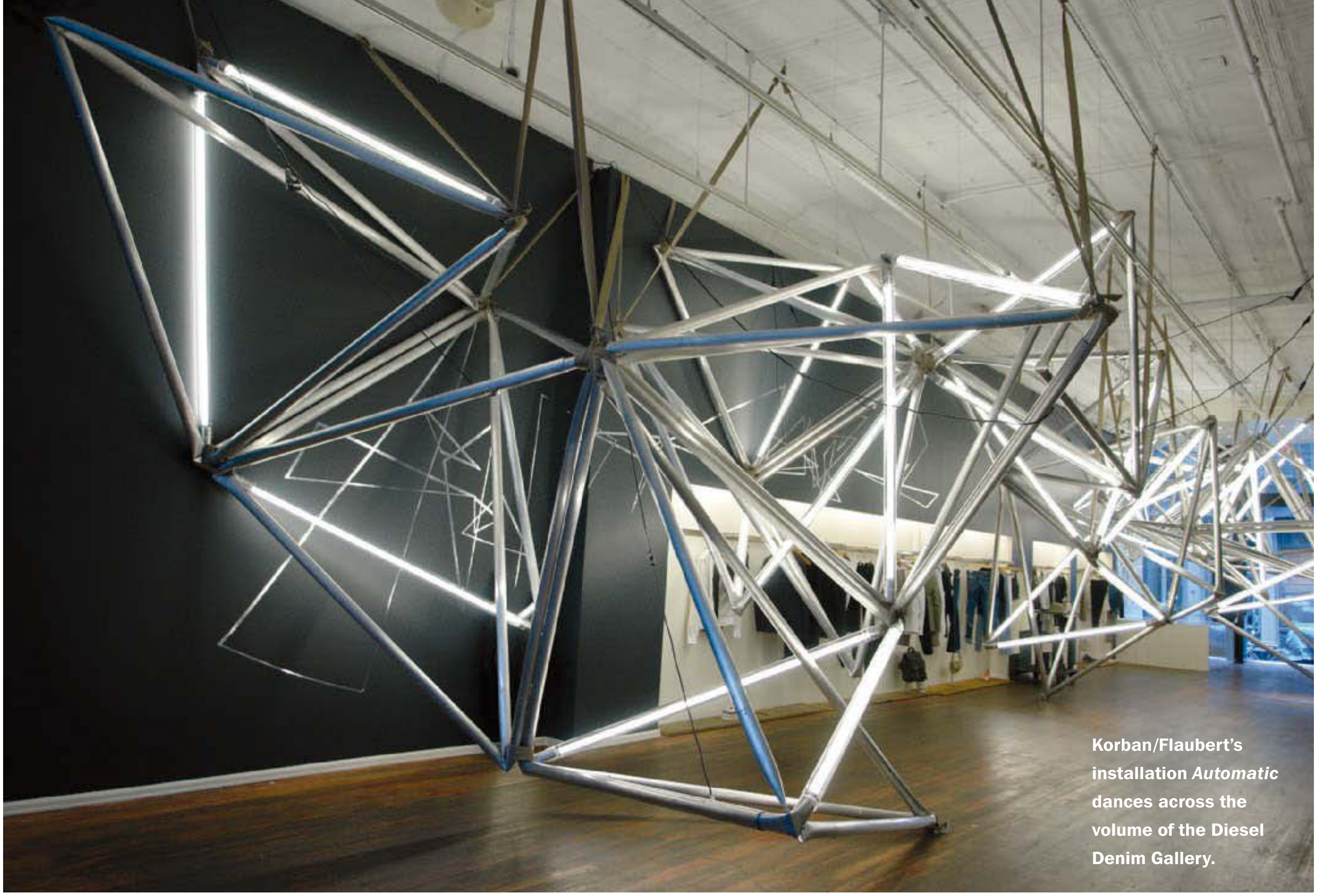

Korban/Flaubert's installation *Automatic* dances across the volume of the Diesel Denim Gallery.

PHOTOGRAPHY: © STEFANIE FLAUBERT, KORBAN/FLAUBERT

Unapologetic, geometric, dynamic—it's *Automatic*

By David Sokol

Look closer. That's the way Janos Korban and Stefanie Flaubert approach their work. Korban, a metalsmith, and Flaubert, trained as an architect, have made a career from studying patterns in nature. The husband-and-wife team might scrutinize a vine near their studio in Sydney, Australia, for example, tease out the basic geometric module forming it, and with a change of scale and material, transform that module into a new furniture piece or art installation.

In that vein, Korban/Flaubert initiated in 2002 an ongoing exploration of tetrahedra. The investigation first produced Tetra, a stainless-steel-and-polypropylene object that can nest into others in various configurations, like peptide chains. That was followed by commercially available luminaires, called Weblights, which are smaller outlines of Tetra that incorporate LEDs. The design team creates building blocks without "forcing an outcome or formal shape," says Flaubert, noting that users determine the arrangement of Tetra or Weblights. "Like evolution, there are no constraints, but only logic in the way modules connect. It's automatic and unconscious."

Korban and Flaubert introduced Americans to their point of view and methodology in May, when they suspended *Automatic* from the ceiling of the Diesel Denim Gallery in New York's SoHo neighborhood. The latest in a series of temporary works commissioned for the 950-square-foot store by freelance curator Sebastien Agneessens, *Automatic* also represents one of Korban/Flaubert's most monumental uses of tetrahedra.

Automatic could be described as Weblights writ large. Instead of LEDs, it incorporates off-the-shelf T8 fluorescent tubes within truncated triangular prisms fabricated from 7-foot-long aluminum arms. To generate a complex form, Korban/Flaubert suspended a starting module from Diesel's ceiling and improvised the resulting chain. "One prism connects to the next," Flaubert explains, "as if they're floating in space, docking onto each other."

The adaptation of Weblights to an architectural scale posed certain practical challenges in addition to Korban/Flaubert's queries into the mathematical forms that underpin life. For example, parts of the installation intervened with circulation in the long, skinny retail interior, forcing visitors to duck and weave around the abstract volumes. "It's about immersion," Flaubert says, adding that the lights served as cues for participants who otherwise may be disoriented by the asymmetrical composition.

Flaubert calls *Automatic* "aggressive, tense. We wanted to create the sense of being propelled, of being on the edge of control." In a previous iteration of the project, installed at Sydney's Object gallery, slightly smaller illuminated modules stacked up and away from the viewer, filling out the domed volume of a former chapel—more a dainty artwork to behold than a partner to tango with. Yet another sensory experience may be realized as soon as next month: As of press time, Korban/Flaubert was in negotiations to reinstall *Automatic* for next month's Art Basel Miami Beach. ■

Project: Automatic, *New York*
Designer: *Korban/Flaubert—Janos Korban, Stefanie Flaubert, designers; Chris Hoover, production director*

Sources
Tubing: *Capral Aluminum*
Fluorescent tube lighting: *General Electric*

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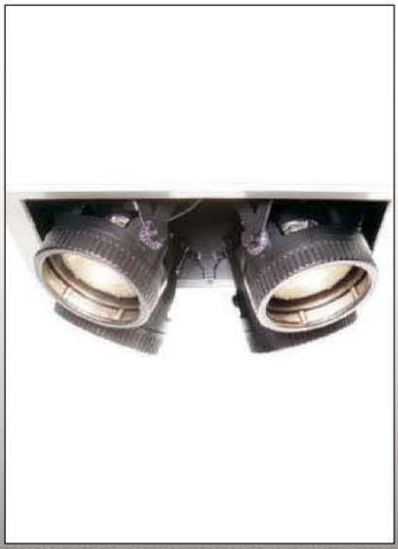

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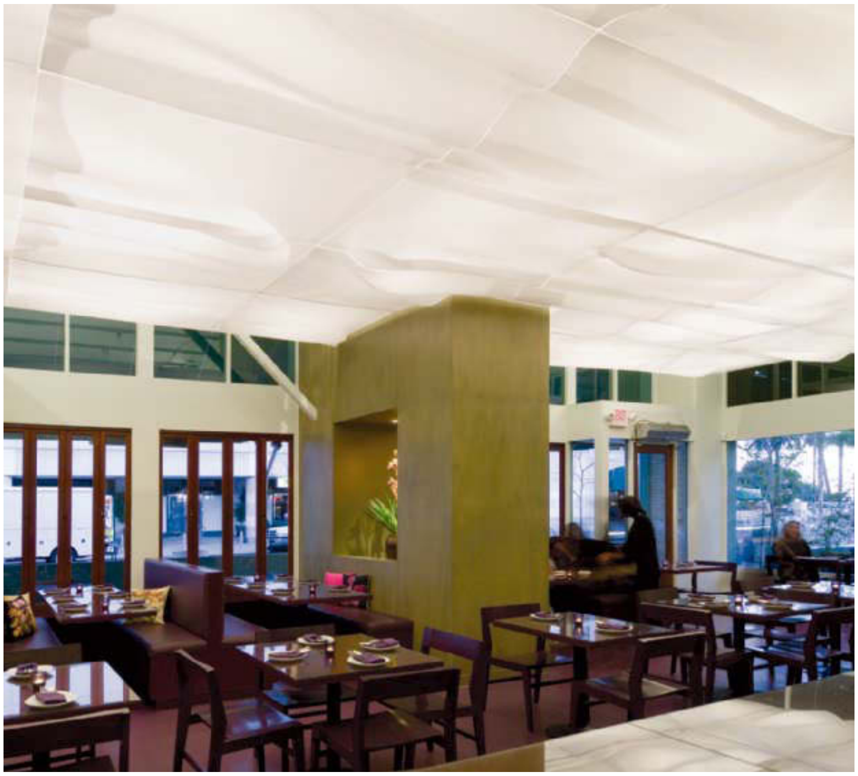
Johnston Marklee & Associates liquify the ceiling plane of **The Orchid** restaurant in coastal Los Angeles

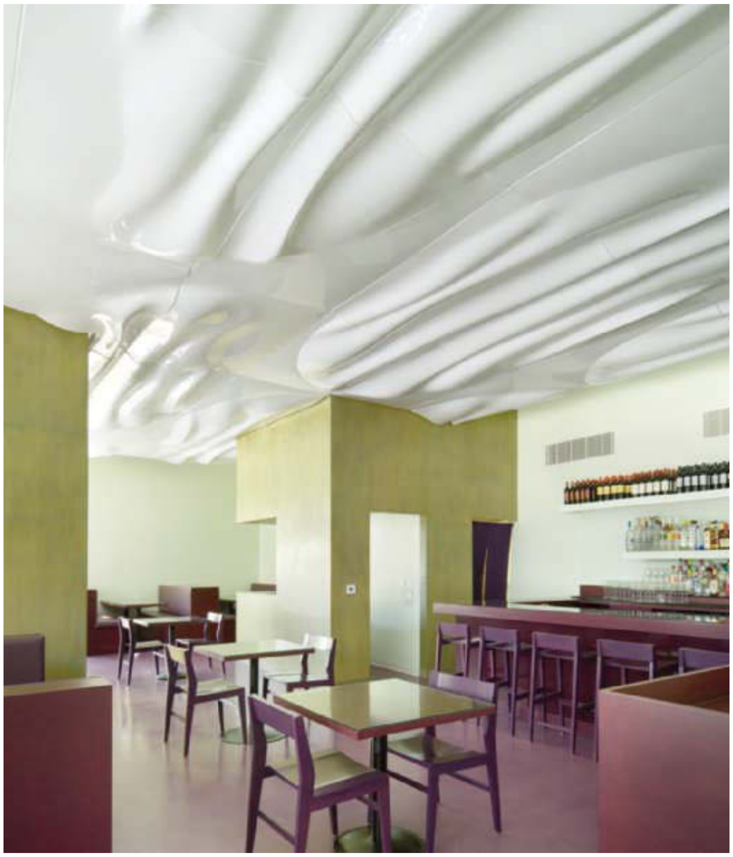


By Russell Fortmeyer

Thai restaurants are as ubiquitous in Los Angeles as palm trees. But the local architects at Johnston Marklee & Associates resisted the city's tired clichés—usually a punkish, fluorescent-inflected chinoiserie, circa 1984—to instead design a sleek, light-filled interior for The Orchid restaurant in Santa Monica. The 2,000-square-foot space opened in April 2005, half a block from the city's palm-tree-lined Ocean Avenue.

With a tight budget and a simple program—bar, dining room, and kitchen—Johnston Marklee focused its energies on developing a dramatic illuminated ceiling. Inspired by the delicate petals of the restaurant's namesake flower, the architects designed ⅛-inch-thick, white acrylic panels in a 3¾-by-6-foot standard size and hung them with steel wire cables from a Unistrut support system attached to the structural ceiling. The architects modeled the panels—there are nine total, but only one type—using Rhino software, exporting the data to the model shop on the Warner Brothers studio lot. At Warner, craftspeople used a CNC-milling machine to create the formwork and then vacuum-formed each panel into shape.

The ethereal panels achieve the mostly seamless continuity of a lush surface while masking the simplicity of the restaurant's lighting system. The architects painted the overlying ceiling cavity white and, working with the lighting designer F.I.R.E. L.T.D., installed a series of 50-watt MR16 track lights directed toward portions of the ceiling plane. The lights are wired to wall-box dimmers based on a zoning arrangement, which makes it easy to set the mood when the restaurant winds down and the bar gets going in the evenings.



At night, concealed track lighting illuminates the ceiling panels (above), while they become milky white by day (left).

Seriality and repetition have been ongoing research interests for the architects, notes Sharon Johnston, AIA, adding, "We were interested in getting this richness and complexity from the crenellations in the panels and the modulations that can be explored within a unitized system." Johnston's partner, Mark Lee, says they could experiment with rapid prototyping for the ceiling because there were no load-bearing requirements for the panels. "We haven't been able to use this for a building skin," Lee says, though he adds they are currently researching the methodology's use for standard exterior cladding systems. Like many small firms, a hallmark of Johnston Marklee's practice is mining conventional building systems—in this case, acrylic panels—for unintended effects and uses. ■

Project: *The Orchid, Santa Monica, California*

Architect: *Johnston Marklee & Associates—Sharon Johnston, AIA, Mark Lee, Anne Rosenberg, Daveed Kapoor, Andri Luescher, Anton Schneider*

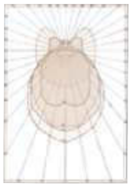
Lighting designer: *F.I.R.E. L.T.D.*

Sources

Downlights: *Rex Mini*

Ceiling ambient: *Lightolier Lytespan with W.A.C. track lights*

PHOTOGRAPHY: © ERIC STAUDENMAIER



Light distribution

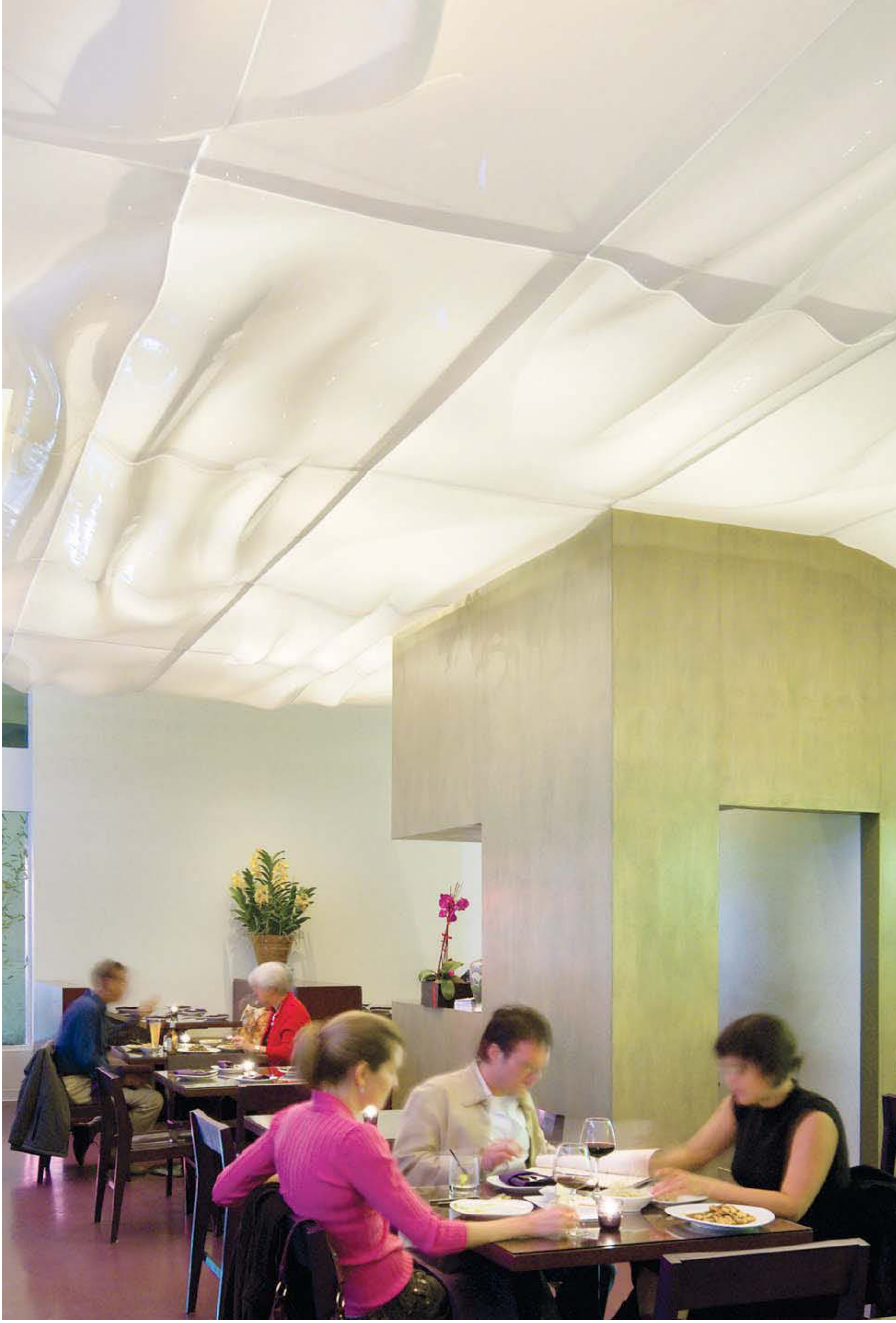
Light distribution
transformation

Light topography

Surface topography

Petal panel

The architects based the acrylic panel surfaces on orchid petals, shaping a single panel type to achieve both dramatic lighting and formal exuberance.



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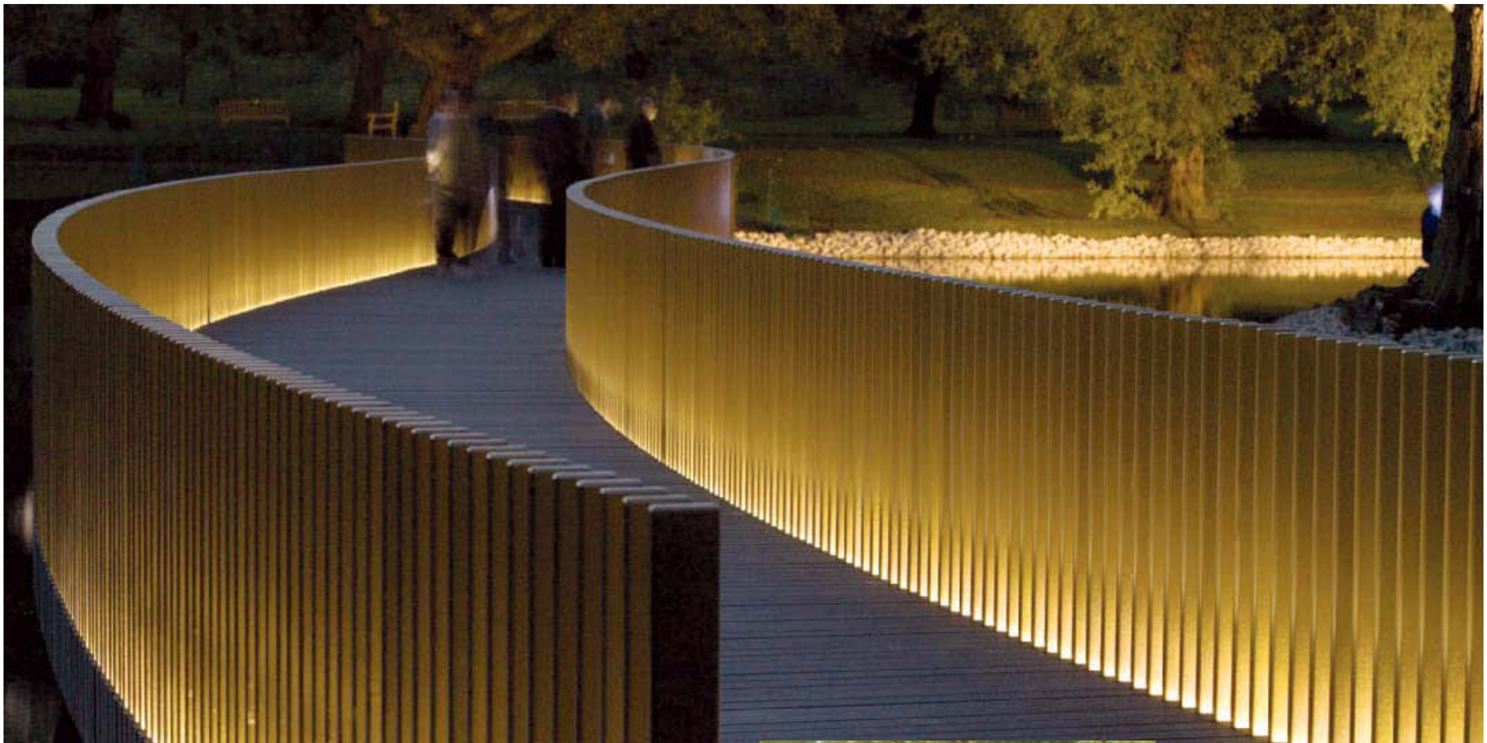
Speirs and Major treads lightly at **The Sackler Crossing**



PHOTOGRAPHY: COURTESY ROYAL BOTANIC GARDENS, KEW

By David Sadighian

The London- and Edinburgh-based lighting design firm Speirs and Major Associates' portfolio boasts a gamut of neon-hued urban landmarks, ranging from the Bridge of Aspiration in London to developments in Dubai. But a recent commission to illuminate The Sackler Crossing, a John Pawson–designed footbridge at the Royal Botanic Gardens, Kew, offered a unique exercise in subtlety: designing for a historic site while maintaining a concern for its ecology.

Situated in southwest London between Richmond and Kew, the 167-year-old Botanic Gardens is a sprawling research and education institution that has collected more than an eighth of all known plant species. When first asked to illuminate Pawson's bridge, which spans the banks of a central lake, project designer Philip Rose wondered whether LED lighting would adversely affect the plants and historic landscapes of the Botanic Gardens. "We questioned if the bridge should be illuminated, given the possible light pollution and the environmental impact the lighting may have on the local flora and fauna," he says.

Project: *The Sackler Crossing, Royal Botanic Gardens, Kew, London*
Architect: *John Pawson Architects*
Lighting designer: *Speirs and Major Associates—Mark Major and Philip Rose, project designers*

Engineer: *Buro Happold*
Electrical engineer: *Atelier Ten*

Sources
Exterior lighting: *ACDC Lighting Systems and Willy Meyer*

Spaced about ½ foot apart, the balustrades make a seemingly continuous S shape.

Following the advice of the Botanic Gardens' herbologists and ecologists, Speirs and Major developed a Minimalist design solution that complements both landscape and structure. Custom LED fittings embedded within the bridge project a warm gradient of light up each of the 1,000 freestanding bronze balustrades that enclose the walkway, creating a diaphanous perimeter that is reflected in the lake. "The lighting concept was developed to help reinforce [the architect's] concept of walking on water, with the bridge deck seeming to float just above the water's surface," Rose says. Moreover, the light does not spread into the immediate habitat.

Speirs and Major also uplit a nearby cluster of trees with floodlights and ceramic metal-halide spotlights. The overall composition not only underscores the area as a visual and programmatic nexus in the gardens' revised master plan, but allows visitors "to understand the relationship between the architecture, the water, and its natural setting," Rose says. "It gestures toward the gardens' long tradition of revealing 'the picturesque.' " ■

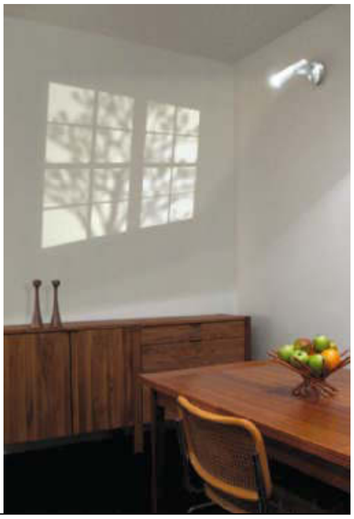
After graduating from Yale in May, David Sadighian was an editorial intern at RECORD.

Lighting Products

► One, two, four step

The Ledra step lighting collection includes Ledra Uno, Ledra Duo (right), and Ledra Quattro. Each recessed fixture has a diameter of only 2" and features a 3-watt LED, which maintains 70 percent lumen output after 50,000 hours. The fixtures come in chrome or matte finishes and are offered with a warm white or cool white LED. Bruck Lighting Systems, Tustin, Calif. www.brucklighting.com **CIRCLE 200**

► Shadow illusion



The limited edition Reveal lamp creates the impression of sunlight shining through a window and onto an interior wall. U.L.-listed, Reveal can be placed on a shelf or mounted directly on a wall or ceiling. Multiplane analog images create a sense of depth in the cast image, and air currents through the projector create organic, nonrepeating movement in the trees. The lamp and its packing are made with recycled or fully recyclable materials. Adam Frank Inc., Brooklyn, N.Y. www.adamfrank.com **CIRCLE 201**

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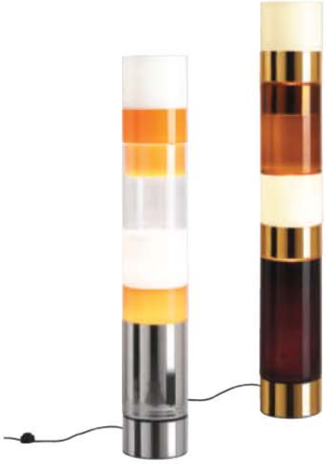

▲ Balancing act

The David Rockwell Collection for Leucos represents the first time the Italian lighting company has commissioned an American designer to develop products for the U.S. and international markets. The Stacking lamp is a human-scale floor light inspired by Japanese lacquered stacking cups. It is composed of individual cylinders of colored glass stacked to form a radiant, decorative column. Leucos USA, Edison, N.J. www.leucos.com **CIRCLE 204**

▼ The one ring of light

The Ring ceiling fixture features halogen spotlights that are supported between two concentric aluminum rings and may be easily positioned and rotated. The fixture's power-supply system allows the two rings to distribute the low voltage along their surface, while the elastic spotlight-supporting elements transmit it to the bulb. The lamp is available in various diameters for hotel reception areas, conference rooms, restaurants, and residential projects. Inside, Mestre, Italy. www.inside.it

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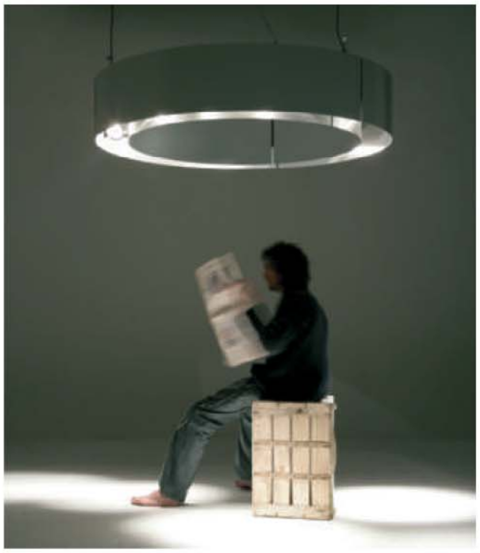

▲ LED light bar

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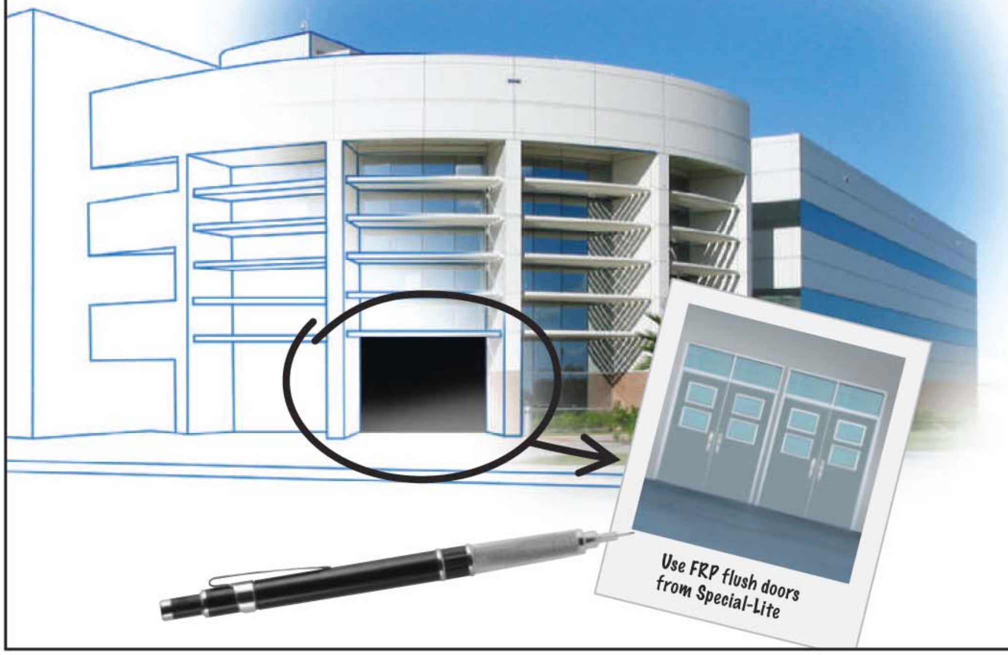
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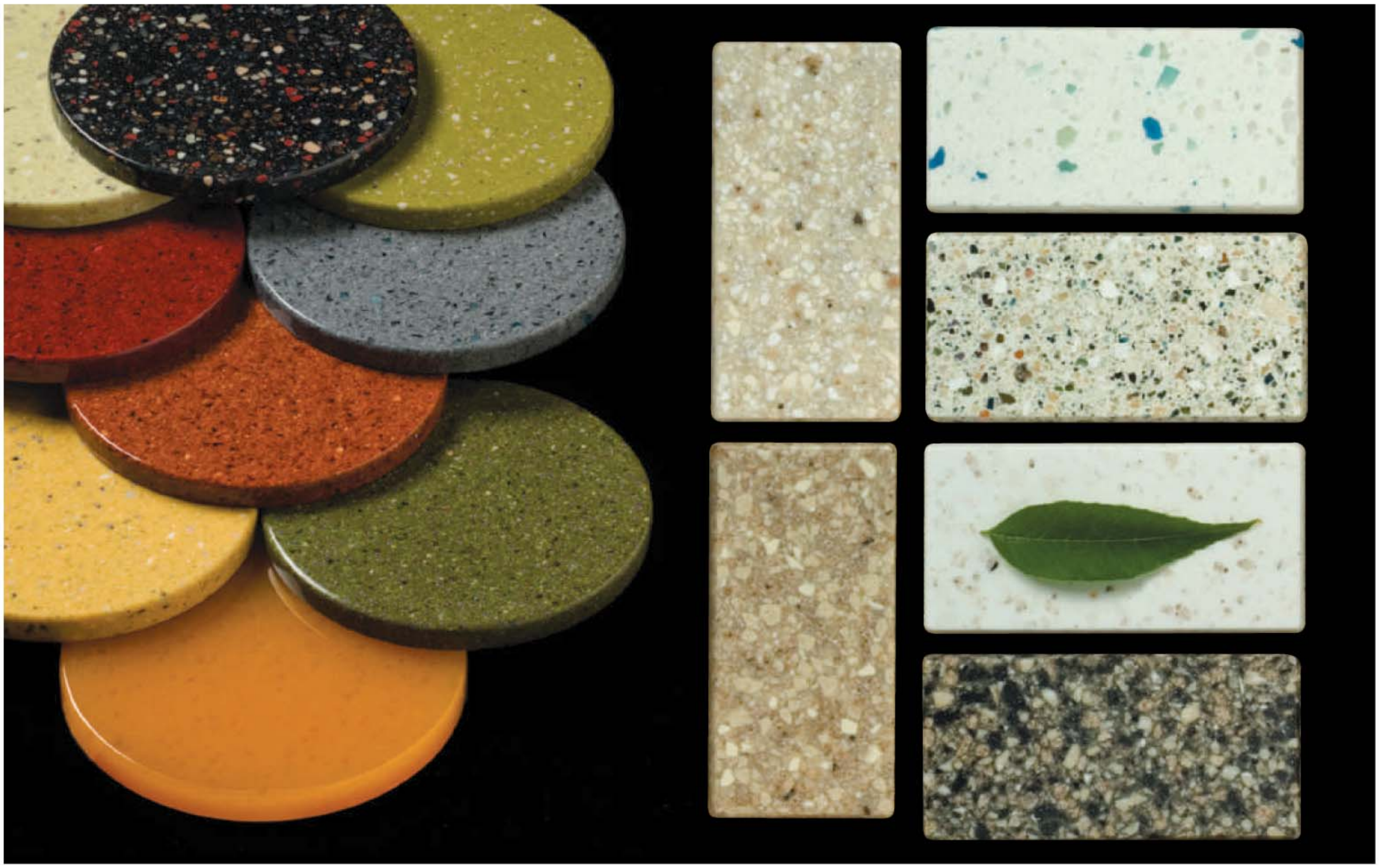
Product Focus **Materials**

Our roundup this month is intended to **help expand your material design palette.** In material news, Material ConneXion, the New York–based consultancy, has joined forces with MBDC and EPEA to create a platform for **developing Cradle to Cradle materials and products.** *Rita Catinella Orrell*



New solid-surfacing additions include SCS-certified recycled products

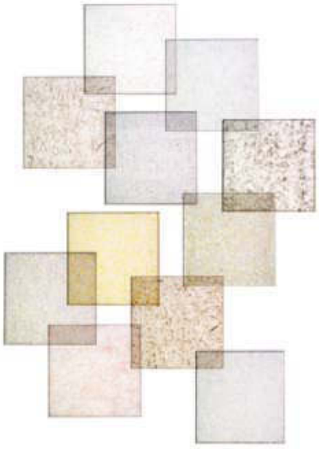
Avonite Surfaces has introduced nine new solid-surfacing products, including two new Recycled Products, which complete a line of eight SCS-certified products offering a minimum of 40 percent preconsumer recycled waste content. The two new Recycled Products include Crater, a basic black with an array of large accents of yellow, gray, red, and brown; and Summer, a cedar green with flecks of black, gray, and clear hues.

Avonite first introduced recycled solid surfacing in 1996 with Kaleidoscope, which contained a minimum of 40 percent recycled content. Avonite's marketing manager, Wayne Rutledge, says the company decided to obtain third-party certification from SCS in 2005 in response to the "overactive green marketing buzz" in the past few years.

The surfacing's preconsumer recycled content comes from trim scrap and imperfect sheets from Avonite's production facilities that would otherwise be sent to a landfill. Although there is no collection system in place to retrieve old installations, all of the products in the line are able to be recycled back into new sheets. According to Rutledge, the company's Custom Sheet Size Program is an integral part of its approach to sustainable design. "Our wide-sheet and custom-size program provides the smart designer and contractor with a way to cut costs, reduce waste, and save time in large commercial applications," he says. Such applications include hotel vanities, tub surrounds or wall cladding for military or student housing, shower stalls, and hospital rooms. Avonite Surfaces, Florence, Ky. www.avonitesurfaces.com **CIRCLE 208**

For more information, circle item numbers on Reader Service Card or go to **architecturalrecord.com/products/**.

The nine new colors in the line (group on left, clockwise from top) include Spanish Moss, Crater, Coastal Green, Silver Comet, Cosmic Penny, Summer, Amber Glass, Tuscan Gold, and Martian Sunset. The colors of the Recycled Products line (group on right) now include Crater and Coastal Green (shown at left).



◄ Embedded inclusions

Showcased at this year's Globalshop and Hospitality Design trade shows, Lunalite surfacing exhibits a range of effects, from rustic textures to metallic shimmer. Available from Architectural Systems, Lunalite can be applied to doors, windows, dividers, walls, countertops, and displays. It comprises natural, holographic, and recycled inclusions such as mica, gold flake, and sisal fibers, which are embedded in a range of materials, including glass and acrylic. Architectural Systems, New York City. www.archsystems.com **CIRCLE 209**

◄ Engineered surfacing

Trend Q is a new, engineered stone product for all residential and commercial surface applications, including walls, floors, and countertops. Manufactured in the U.S., Trend Q contains up to 72 percent postconsumer recycled content and is impervious to stains and fading. The ¼"-thick surface is available from 12" tiles to custom-size panels and can be installed over existing surfaces. The recycled glass and quartzite particles are suspended in a pigmented polymer base, creating saturated color and depth. Trend USA, Miami. www.trendgroup-usa.com **CIRCLE 210**

▼ Glass gemstones

Gemstone colors, the latest glass product from Nathan Allan Glass Studios, are recommended to be used with Nathan Allan's original Freeform texture, but can be applied to any of 55 standard textures. Specifiers can choose from a standard color inventory or provide a Pantone number of their choice. Gemstone colors are ideal for applications where backlighting is difficult, including cladding columns, wall coverings, and feature walls. Nathan Allan Glass Studios, Richmond, B.C. www.nathanallan.com **CIRCLE 211**

▲ Satin patina illusion

TCS Satin roofing is a stainless-steel substrate plated with Follansbee's patented ZT alloy and micro-embossed with a pattern resembling the soft satin patina of pure zinc plate. The fine embossed pattern diffuses the light striking the roof, creating a soft gray patina that usually takes months to develop. The end result is similar to the natural patina of solid zinc, though the material produces superior forming capability and longevity of service. Follansbee Steel, Follansbee, W.V. www.tcssatin.com **CIRCLE 212**

▼ Greener wall protection

InPro Corporation's new SanparrelGT sheet is a PETG (polyester)-based, rigid sheet product that is intended to be a greener alternative to other non-PVC sheet materials. Unlike products made with ABS or polycarbonate, SanparrelGT sheet offers an ecofriendlier makeup and higher recycling rates when compared to other plastics, according to the manufacturer. The new rigid PETG sheet product has an NFPA Class A fire rating, and comes in 54 standard colors at .040" and .060" thicknesses for high impact resistance. The sheet comes in standard 4' widths and 8' lengths. Custom lengths and rolls up to 120' are also available. Inpro Corporation, Muskego, Wis. www.inprocorp.com **CIRCLE 213**

◄ A fresh face for concrete

Designer Alexa Lixfeld experimented with temperature, molds, and the basic ingredients of concrete to create Creacrete, a dense, permanently glossy material that can be less than 3 mm thick. Abrasion- and acid-resistant, Creacrete is an alternative to ceramics for floor and wall coverings, decorative objects, and facades. A cold-casting process—versus the two firings necessary for ceramics—streamlines production, reducing cost and energy consumption. Alexa Lixfeld Design, Hamburg, Germany. www.alexalixfeld.com **CIRCLE 214**

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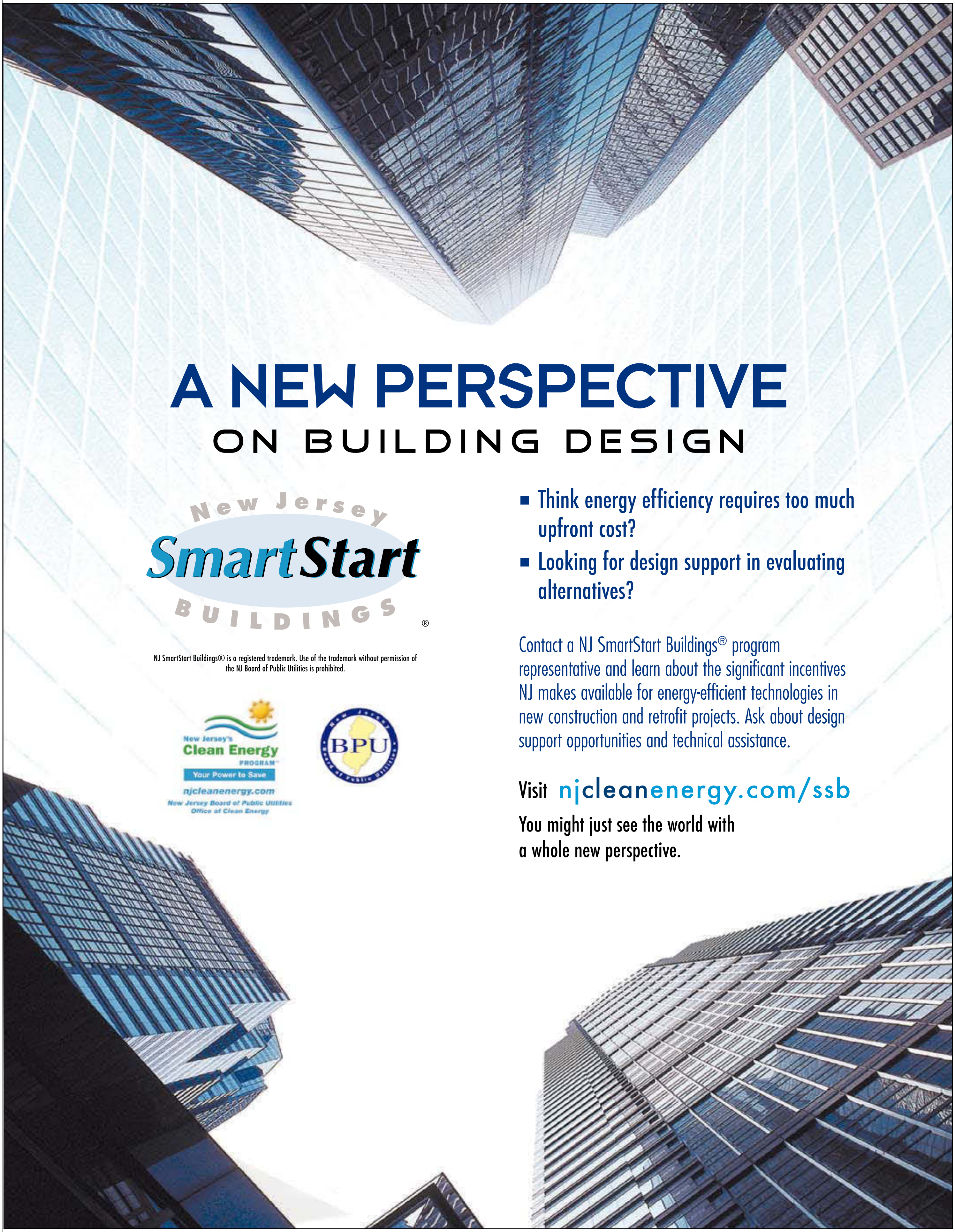
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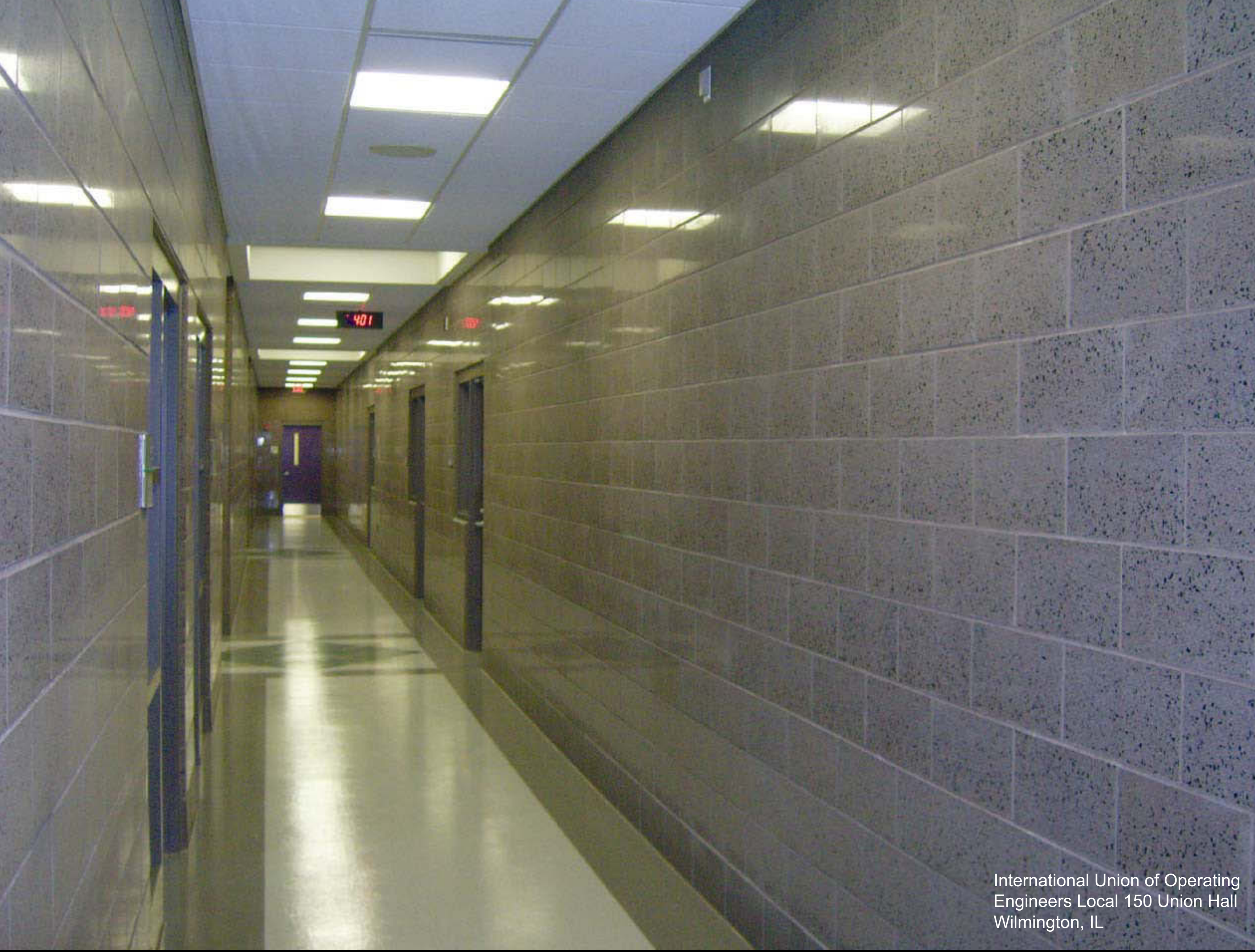

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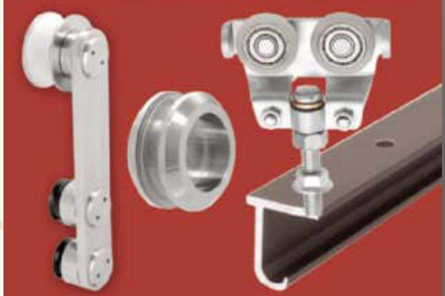

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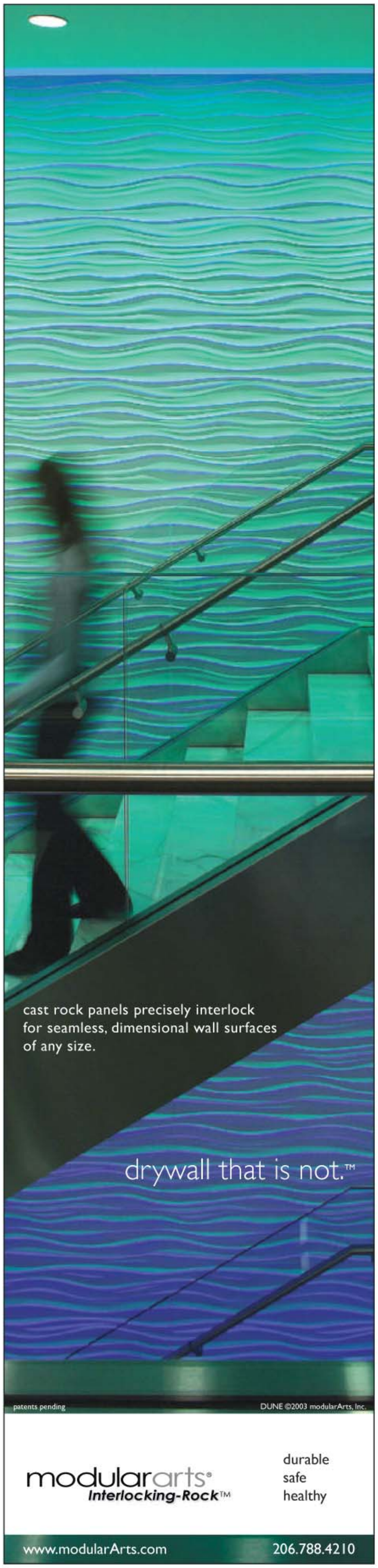
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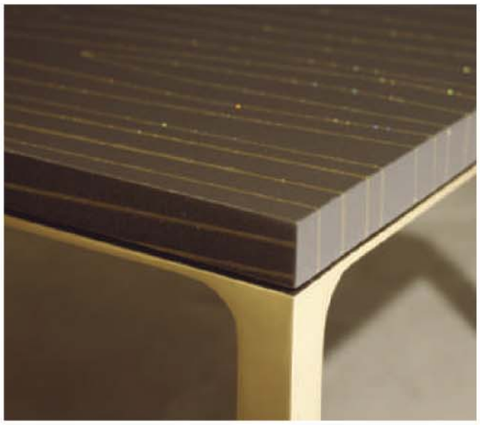
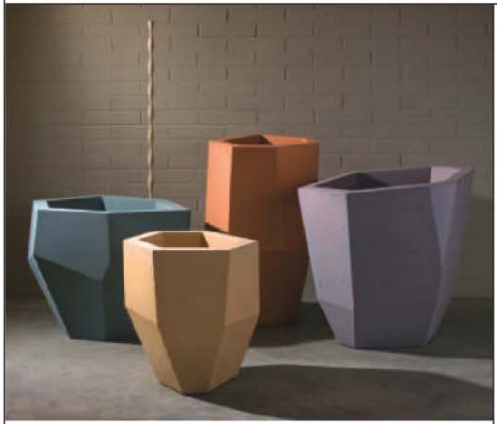
Product Briefs

► Groovy grain pattern

Two new David Rockwell–designed tables will be sold under the Dennis Miller Collection, which features seating by 12 leading American architects, designers, and artisans. Russian Dolls is a square occasional nesting table that features a jewel-like laminated-glass top that sits on an angled cube base made from highly polished mirrored chrome. Gold Grain (right) has a DuPont Corian table top featuring a routed, metallic-gold wood-grain pattern that is supported by a polished brass pedestal base. Gold Grain can be used indoors and out. Dennis Miller Associates, New York City. www.dennismiller.com **CIRCLE 215**



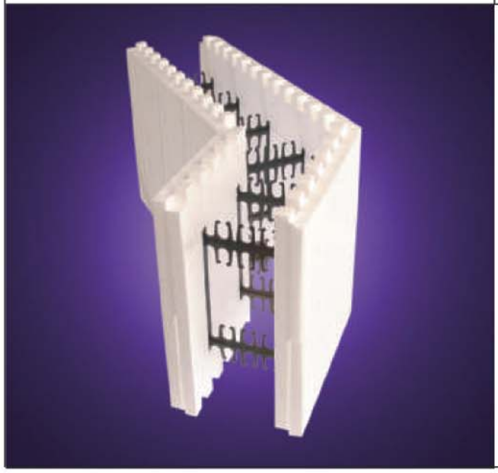


▲ Crystal-inspired concrete containers

Phoenix-based Kornegay Design has introduced the Quartz Series of landscape containers to their product line of finely crafted precast-concrete site furnishings. Dynamic intersecting planes compose the six faceted sides of each of the four containers in the series. Inspired by colored quartz crystals, designer Larry Kornegay has custom-mixed integral concrete pigments in crystal-inspired hues. The planters come in Small, Medium Fat, Tall Thin, and Tall Fat sizes. Kornegay Design, Phoenix. www.kornegaydesign.com **CIRCLE 217**

▼ Well-crafted entry

Created exclusively for the hospitality trade, the Sun Valley Bronze Hotel Entry System features a state-of-the-art key-card-entry mechanism. Complete entry sets include the internal locking system, card reader, and strike; software and programming equipment are available from Saflok. The system is shown here in the S3 finish with a Beaver Tail lever, but any lever may be substituted. The set measures 3⅝" x 10½" x 1¹⁄₁₆". Also new from Sun Valley Bronze are intricately patterned glass door knobs, the Arch entry-gate latch, and a pocket door edge pull made of solid bronze. Sun Valley Bronze, Hailey, Idaho. www.svbronze.com **CIRCLE 216**

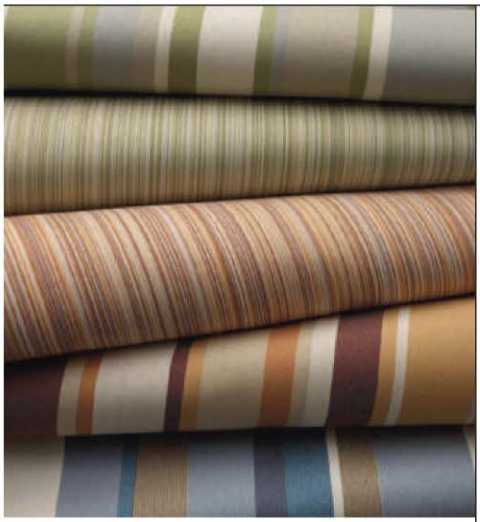


◄ New corner form option

In response to customer requests for expanded offerings in the recently integrated Tritex product line of insulated concrete forms (ICFs), Reward Wall Systems has introduced the Tritex 11¼", 45-degree corner form. The new corner completes the Tritex ICF products available in the 11¼" width and will give customers an additional corner option. The new form went into full production last July. Reward Wall Systems, Omaha. www.rewardwall.com **CIRCLE 218**

► Greener exterior paint

Outside, from Yolo Colorhouse, is a high-performance, zero-VOC, 100 percent acrylic exterior paint offered in a designer palette. A select palette of 36 colors is divided into six distinct families named after landscapes and elements of nature. To simplify the color selection process, Yolo Colorhouse created 90 customized recommendations for exterior color combinations, with suggestions for a home's body, trim, and accents. The paint comes in 100 percent recycled plastic quarts and gallons. Yolo Colorhouse, Portland, Ore. www.yolocolorhouse.com **CIRCLE 219**

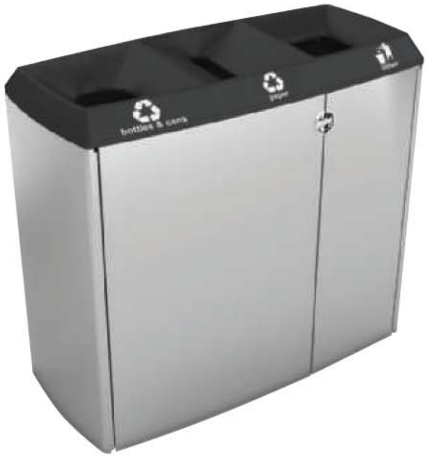


▲ Healthier patterns

KnollTextiles, a division of Knoll, has updated the Avenue collection of health-care privacy curtain fabric introduced in November last year. A new medium-scale stripe reverses to a small-scale stripe, yet maintains balance, color, and tone across the pattern. Made of Trevira CS polyester, the curtain fabric is available in six colors. KnollTextiles, New York City. www.knolltextiles.com **CIRCLE 221**

▼ Recyclable trash receptacle

The Transit receptacle from Forms+Surfaces was developed to meet the rigorous demands of high-traffic public environments, including airports, train and bus terminals, and university campuses. The receptacle's space-saving design incorporates three separate openings and three independent internal compartments for collecting litter, paper, and beverage containers. The unit's stainless-steel components have a recycled content ranging from 70 to 85 percent. All components including liners are fully recyclable. Forms+Surfaces, Carpinteria, Calif. www.forms-surfaces.com **CIRCLE 220**



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◄ Drainage board

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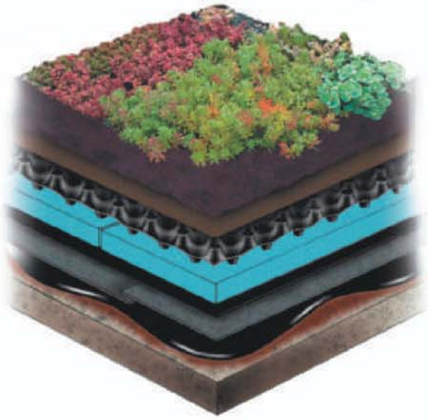

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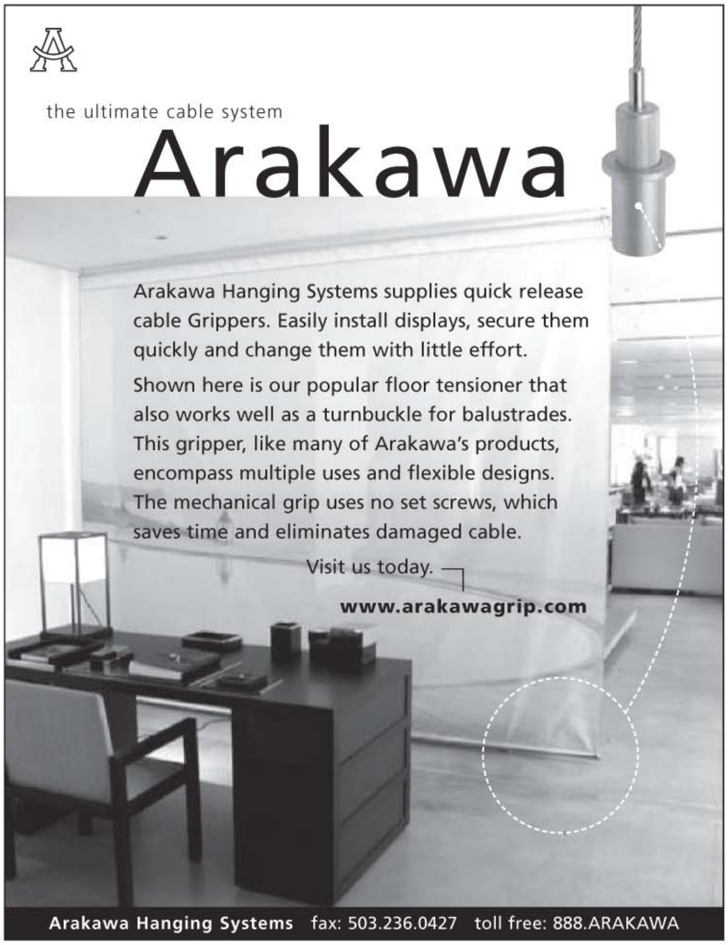

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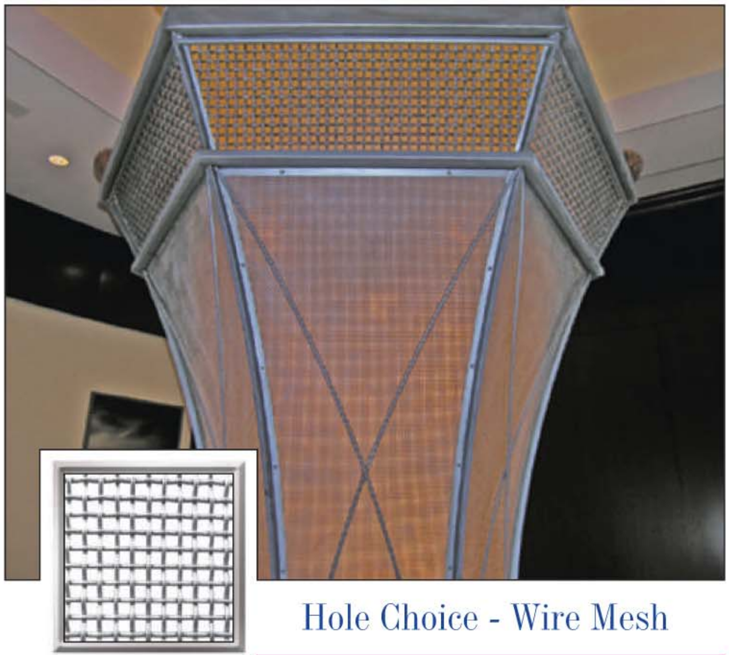

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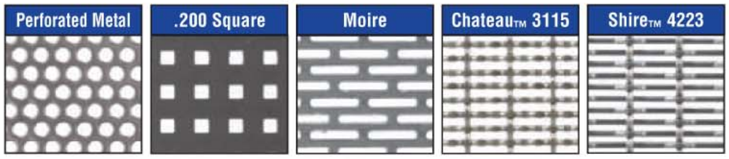

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Berlin/New York Dialogues
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November 8, 2007–January 26, 2008
The exhibition explores lessons learned through the cross-fertilization of ideas among citizens, policy makers, institutions, and design professionals in Berlin and New York, focusing on exemplary practices and strategies affecting city planning and new building. Using a variety of imagery, illustration, and drawings, the exhibition describes social, political, economic, and cultural processes through current works of architecture and urban planning. At the Center for Architecture. Call 212/683-0023 or visit www.aiany.org.

75 Years of Architecture at MoMA
New York City
November 14, 2007–March 10, 2008
MoMA's Department of Architecture, founded in 1932, was the world's first curatorial department of its kind. This exhibition of drawings and models from the collection celebrates the department's 75th birthday and demonstrates the development of its collecting practice, with a number of recent acquisitions on view, including several drawings by Oscar Neimeyer, displayed in honor of his 100th birthday. At the Museum of Modern Art. Call 212/708-9400 or visit www.moma.org.

High Density, High Service, High Design Housing
Los Angeles
November 26–December 14, 2007
This exhibition focuses on technologically advanced housing prototypes for Culver City developed in the 2006–07 research studio led by UCLA professor of architecture and urban design Dagmar Richter. At UCLA Department of Architecture and Urban Design Perloff Gallery. Call 310/267-4704 or visit www.aud.ucla.edu.

Eero Saarinen: Shaping the Future
Bloomfield Hills, Michigan
November 17, 2007–March 30, 2008
Traveling from Europe, this exhibition is the first retrospective of the life and works of one of the more celebrated designers of the Modern era. Saarinen is best known for his postwar masterpieces, including the 630-foot-tall stainless-steel St. Louis Gateway Arch, the TWA terminal at New York's John F. Kennedy Airport, numerous university campus plans and buildings, and the General Motors Technology Center near Detroit. At the Cranbrook Art Museum. Call 248/645-3323 or visit www.cranbrookart.edu/museum or www.eerosaarinen.net.

Hawaiian Modern: The Architecture of Vladimir Ossipoff
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foremost architect, featuring original drawings, architectural plans, archival photographs, and personal ephemera, as well as a specially commissioned documentary charting Ossipoff's influence as the pre-eminent voice for tropical modernism. At the Honolulu Academy of Art. Call 808/532-8700 or visit ww.honoluluacademy.org.

Shenzhen—Hong Kong Biennale
Hong Kong
December 1, 2007–March 1, 2008
Qingyun Ma, dean of the University of Southern California School of Architecture, will be the curator of the first two-city biennale that opens simultaneously in Hong Kong and Shenzhen. "City of Expiration and Regeneration" is the theme of the biennale that will explore the notion of the life cycle of built environments and the need for revitalization to take advantage of new materials, technology, and resource-management techniques, as well as accommodate changing trends in the way people live, work, play, and communicate. For additional information, visit www.hkia.net.

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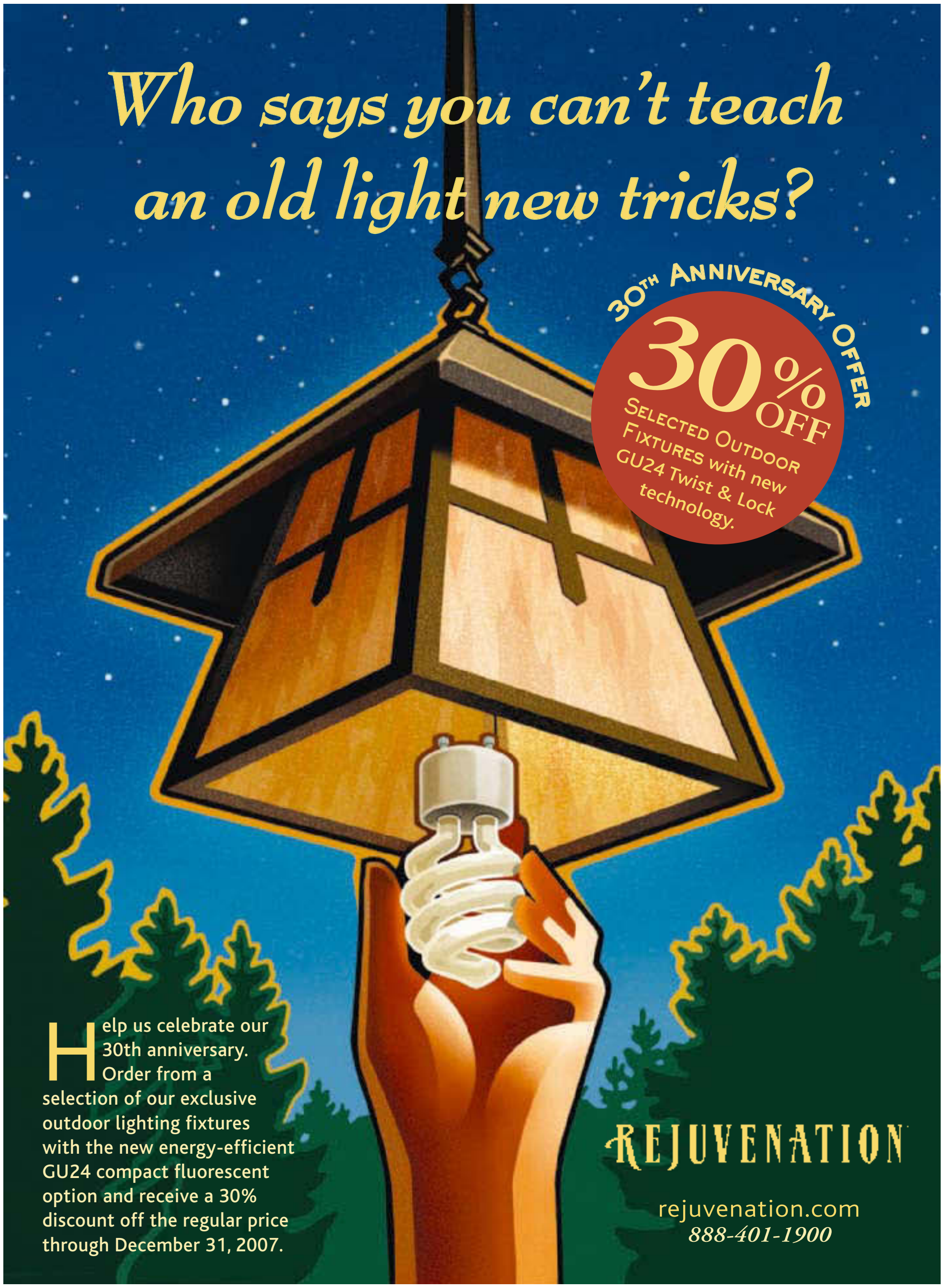
Me, Myself and Infrastructure: Private Lives and Public Works in America
Chicago
Through November 16, 2007
Featuring a New York coffee shop, a comfortable living room, a city bus stop, and a "big box"–type store, the exhibition invites visitors to explore how their decisions—whether it's buying a home in a new subdivision or shopping at Wal-Mart—shape the built environment. At the Chicago Architecture Foundation. Call 312/922-3432 or visit www.architecture.org.

Double Edge:
Atelier Bow-Wow and Kivi Sotamaa
Los Angeles
Through November 16, 2007
By examining the juxtaposition of two dynamic and innovative laboratories, the show creates a new platform for consideration of where and how technology, culture, and design interact to create future possibilities. At UCLA Department of Architecture and Urban Design Perloff Gallery. Call 310/267-4704 or visit www.aud.ucla.edu.

Zaha Hadid
London
Through November 25, 2007
This exhibition is the first full-scale show of Zaha Hadid's work in the U.K. Spread over two floors of galleries, it focuses on the recent, extraordinarily productive period in Hadid's work. At the Design Museum. Call 0870/833-9955 or visit www.designmuseum.org.

Digitally Mastered: Recent Acquisitions from the Museum's Collection
New York City
Through November, 2007
Digitally Mastered presents approximately 25 works that exemplify the diversity of digital technologies used by today's most inventive designers. In addition to objects directly produced by the computer, the installation features objects that were designed digitally, including laser-cut models, interactive graphic displays, and CAD renderings. Call 212/708-9400 or visit www.moma.org.

Architecture Inside/Out
New York City
Through December 8, 2007



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Architecture Inside/Out demonstrates the unfolding of space by exposing architectural interiors through a range of typologies with an inward focus, including libraries, hotels, retail, and work spaces. Traditional representations such as section, plan, and elevation, in addition to models and details will provide a lens to reveal inherent characteristics of featured interiors, exposing materials, structure, and spatial relationships. *Architecture Inside/Out* takes the familiar architectural conventions and places them parallel to alternative ways of seeing and revealing. At the Center for Architecture. For more information, call 212/683-0023 or visit www.aiany.org.

Michael Maltzan:
The Dark Side of the Moon
Los Angeles
Through December 9, 2007
This site-specific installation by the Los Angeles–based firm Michael Maltzan Architecture introduces a new threshold in the gallery, creating a space between two worlds that provokes interaction and a simultaneous experience for, and between, those who visit. At SCI-Arc. For more information, call 213/613-2200 or visit www.sciarc.edu.

Beyond the Portal: Great Public Spaces in New York
New York City
Through December 21, 2007
This exhibition is inspired by a series of pictorial essays by Stan Ries that appeared in *Interior Design* magazine. These photographs explore nine dramatic interiors. At the New York School of Interior Design. Call 212/472-1500 or visit www.nysid.edu.

Jane Jacobs and the Future of New York
New York City
Through January 5, 2008
An interactive exhibition that highlights the relevance of activist and author Jane Jacobs and the urban design principles presented in her classic text *The Death and Life of Great American Cities*. The show explores contemporary New York through Jacobs's groundbreaking views on the elements of a healthy city, the value of small blocks, the importance of civic activism, and the benefits of a diverse and dynamic neighborhood. It also encourages citizen involvement by helping visitors begin engaging in their own neighborhoods. At the Municipal Art Society's Urban Center galleries. Visit www.rockfound.org or www.mas.org for more information.

Architecture for Humanity: Gulf Coast Reconstruction Projects
St. Louis
Through January 26, 2008
This exhibition features a selection of residential designs, created under the auspices of the not-for-profit humanitarian group Architecture for Humanity, for displaced Gulf Coast communities like Biloxi, Mississippi, following Hurricane Katrina in 2005. The exhibition includes seven projects, some of which are already in construction, by architects from across the country. At the Bernoudy Gallery of Architecture. For more information, visit www.thesheldon.org/galleries.

Lectures, Conferences, and Symposia

Smart Cities: The City Car and Other Recent Work—Bill Mitchell
Los Angeles
November 7, 2007
William J. Mitchell is the Alexander Dreyfoos

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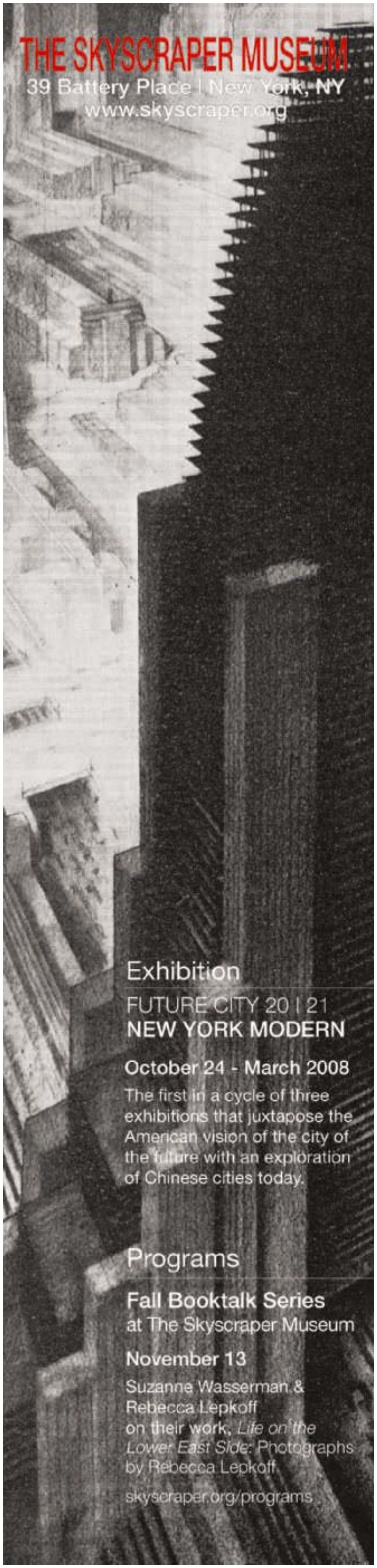
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Programs
Fall Booktalk Series
at The Skyscraper Museum
November 13
Suzanne Wasserman & Rebecca Lepkoff on their work, Life on the Lower East Side: Photographs by Rebecca Lepkoff
skyscraper.org/programs

Professor of Architecture and Media Arts and Sciences at MIT, director of the MIT Design Laboratory, and director of the MIT Media Laboratory's Smart Cities research group. His research focuses on new strategies for architectural design and production, digital media, and cities in the era of large-scale digital networks. Lecture at SCI-Arc. Call 213/356-5328 or visit www.sciarc.edu.

Lecture: Shunji Yamanaka
Los Angeles
November 19, 2007
After working for Nissan Motor's design center, Yamanaka, principal of Leading Edge Design, in Tokyo, became a freelance industrial designer, designing advanced devices ranging from wristwatches to railway cars. At UCLA Department of Architecture and Urban Design, Perloff Hall. Call 310/267-4704 or visit www.aud.ucla.edu.

How to Green Your Home
New York City
November 10, 2007
It hasn't been easy going green, especially for those New Yorkers residing in brownstones and prewar apartment buildings. But that's about to change. Charles Lockwood, an environmental and real estate consultant who is widely quoted as an authority on green issues, will explain what a New York Green Home really is. He should know: Lockwood is not only a green authority, he knows his brownstones. He is author of *Bricks and Brownstone*, the definitive history of the New York town house. For more information, call 212/730-9646 or visit www.classicist.org.

Not Enough Is Too Much: Wolf Prix, Principal, Coop Himmelb(l)au, Vienna + Los Angeles
Los Angeles
November 12, 2007
Wolf D. Prix is a cofounder of Coop Himmelb(l)au. He studied architecture at the Vienna University of Technology, the Architectural Association of London, and the Southern California Institute of Architecture (SCI-Arc) in Los Angeles. He has taught at the University of Applied Arts, Vienna; the Architectural Association, London; Harvard University; SCI-Arc; Columbia University, New York City; University of California, Los Angeles (UCLA); and La Universidad de Palermo, Buenos Aires. In 2004, Wolf D. Prix received the Annie Spink Award for Excellence in Architectural Education for his commitment to teaching and training. At Sci-Arc. For additional information, visit www.coop-himmelblau.at.

Upstate: Writing the City
Syracuse, N.Y.
November 15, 2007
This symposium of leading national journalists and academics will explore the role of the media in shaping public understanding of architecture and urban design in relation to strategies for urban revitalization. At the Warehouse. Call 315/443-2256 or visit www.syr.edu.

The Future of Professional Practice
Washington, D.C.
December 2–4, 2007
Through case studies, plenary discussions, and concurrent seminars, the conference will help attendees explore and discuss the technologies and strategies that will enable them to expand their influence and better manage their practices. At the Capital Hilton. For more information, visit www.aia.org/futureofprofessionalpractice.

Sustainable Architecture Lunchtime Lecture Series
Chicago
Through December 6, 2007
Another free lecture series open to the public, covering subjects such as energy efficiency with doors and windows and green home remodeling. At the Chicago Architecture Foundation. For more details, call 312/922-3432 or visit www.architecture.org.

Lecture: Toyo Ito
Los Angeles
December 10, 2007
Toyo Ito is known for creating extreme conceptual architecture in which he seeks to meld the physical and virtual worlds. He is a leading exponent of architecture that addresses issues of the contemporary notion of "simulated" city. At UCLA Department of Architecture and Urban Design, Perloff Hall. For more information, call 310/267-4704 or visit www.aud.ucla.edu.

Competitions

Palladio Awards
Deadline: November 15, 2007
This program recognizes individual designers and/or design teams whose work enhances the beauty and humane qualities of the built environ-

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CHIEF OPERATING OFFICER AND PROVOST

SCI-Arc is an independent, degree granting, accredited school of architecture (WASC, NAAB). Located in downtown Los Angeles, it is an integral part of this city's quickly growing cultural hub. A leader in the development of experimental architectural pedagogy, SCI-Arc supports the voicing and the making of radical responses to address the real needs of today's built environments. A community of 500 students, 80 faculty - mostly practicing architects, and 25 full time staff, work together in a fluid manner to test new ideas through an engaged process of making. The school is comprised of the Undergraduate Program (5 year BArch), and the Graduate Program with four distinct academic tracts: the three year Graduate program (MArch, first prof. degree), the two year Graduate program (MArch), SCI-FI (one year post-professional degree), and MediaSCAPES (one year post-professional degree). SCI-Arc is a California Nonprofit public benefit corporation.

The C.O.O/Provost, who reports directly to the Institute CEO/Director, is an Officer of the Corporation, and works collaboratively with members of the Administrative team. The C.O.O/Provost is a lead advocate for SCI-Arc's mission, and supports the development and realization of the SCI-Arc Strategic Plan. Key to these functions are the development and coordination of the Institute's budgets, the integration of operational efficiency, and the support of creative long range planning and development. As the manager of SCI-Arc's physical plant and SCI-Arc's student service departments including Registration, Admissions, Student Aid, Student Counseling, H.R. Library, Woodshop/CNC Fabrication, and IT, the C.O.O/Provost provides leadership for the implementation of Institute-wide policy, and facilitates communication amongst the various constituencies of a diverse and engaged community.

The candidate will have a demonstrated understanding of Los Angeles through professional experience with an ability to work effectively within the dynamics of city political and administrative offices. The ideal candidate will understand the legal pro forma, as well as the administrative and operational oversight functions essential to the support and growth of academic nonprofit public benefit corporations. The ideal candidate will have a familiarity with the processes of real estate transactions on the scale of the SCI-Arc plant, including all aspects of their negotiations. Understanding of institutional budgeting and auditing systems, as well as a familiarity with technical tools such as integrated management softwares, will enable the C.O.O/Provost to manage the implementation of institute wide assessment tools, while further realizing the pedagogical and personnel goals of the school.

Qualified candidates for C.O.O/Provost should submit the following materials: a letter of interest addressing qualifications for the position, a comprehensive CV, and three current letters of reference, including contact information, and any questions in writing to: Ms. Bijal Shah, Search Committee Coordinator, 960 East Third Street, Los Angeles, CA 90013 or bijal_shah@sciarc.edu. SCI-Arc is an equal opportunity and affirmative action employer.

ment through creative interpretation or adaptation of design principles developed through 2,500 years of the Western architectural tradition. For more information, call 718/636-0788 or visit www.palladioawards.com.

Venice Lagoon Park
Deadline: November 15, 2007
In celebration of the magazine's 10th anniversary, 2G launches an international ideas competition. This theoretical initiative is intended as a reflection on the contemporary metropolis that pays attention to the tension between global interests and local needs. For more information, visit www.2gcompetition.com.

Califia Sketchbook Design Competition
Deadline: December 1, 2007
The purpose of developing the Califia Sketchbook Design Competition is to express what life will be like in Califia, a proposed next-generation ecocity. People worldwide are invited to enter a conceptual sketch conveying their view of "slices-of-life" within Califia, revealing smarter ways of building, powering, and maintaining the urban fabric. Visit www.greencenturyinstitute.org/tellmemore.html.

AIA150

CAE Educational Facility Design Awards
Submissions Deadline: December 7, 2007
The CAE Educational Facility Design Awards program is a marketplace of ideas. Through this forum, the committee disseminates quality ideas on educational-facility planning and design to clients, architects, and the public. This awards program is an opportunity to engage in critical evaluation and experimentation in the context of clients and their needs. For more information, visit www.aia.org/cae.

South Street Seaport: Re-Envisioning the Urban Edge
Emerging New York Architects 2008 Biennial Competition
Registration Deadline: December 17, 2007
The principal element of the competition is a Community Center/Galleries for the Seamen's Church Institute in New York City. The site straddles the edge of the East River between the South Street Seaport and the Brooklyn Bridge. This is an international competition, open to design students and young professionals who have completed their education within the past 10 years as of September 15, 2007. Visit www.enyacompetitions.org.

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Dates & Events

Multiplicity: The Art of the Furniture Prototype

Deadline: January 15, 2008

The competition is open to studio furniture makers, artists, architects, and industrial designers. Prototypes may be of any type of furniture in any materials—created since January 2000—and intended for production, whether small batch or mass production. Call 828/255-1949 or visit www.furnituresociety.org/multiplicity.

2008 2nd Annual Design Competition for Architectural and Theatre Students

Deadline: January 16, 2008

Architecture students are asked to find an individual, enrolled theater student or group of students to serve as a “client.” The client will outline a program and requirements for an ideal theater for teaching professional theater. The enrolled architecture student, or group, will serve as the project’s “design team.” Held by the Architectural Commission of the U.S. Institute for Theater and Technology. Visit www.usitt.org.

Jeld-Wen Student Design Competition

Deadline: February 29, 2008

Jeld-Wen door manufacturer challenges students to design an entry door. Winners will be selected in spring 2008 by a panel of independent industry professionals and JELD-WEN experts. The winning students’ door designs will be announced at the Pacific Coast Builders Conference in San Francisco, June 25–27, 2008. Visit www.jeld-wen.com.

2008 National Student Steel Bridge Competition

May 23–24, 2008

This competition will take place at the University of Florida in Gainesville, Florida. Visit www.2008steelbridge.com for more information.

E-mail event and competition information two months in advance to elisabeth_broome@mcgraw-hill.com.

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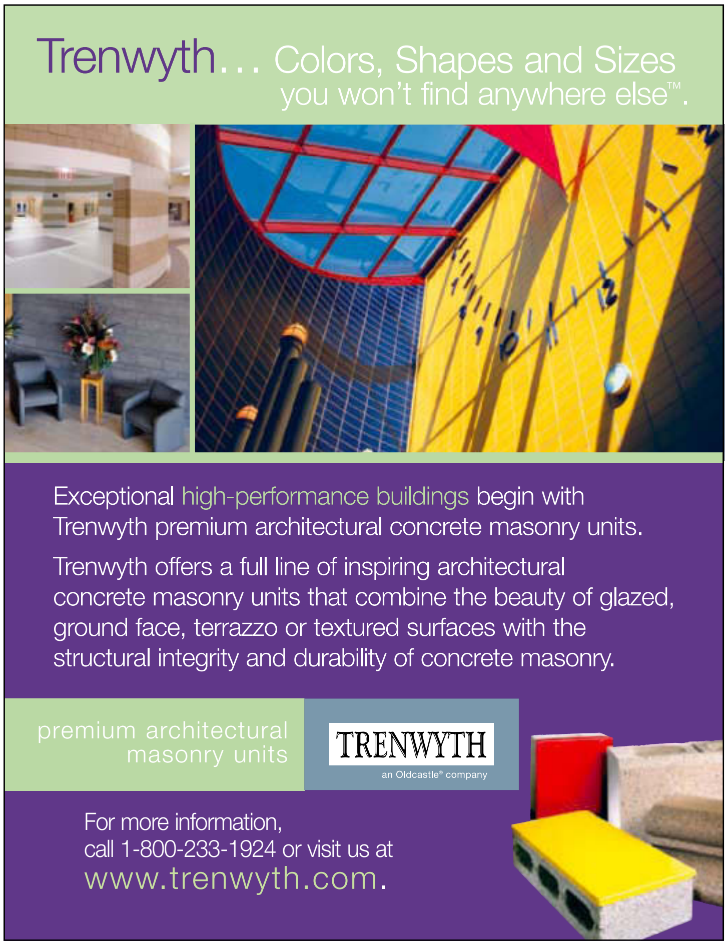

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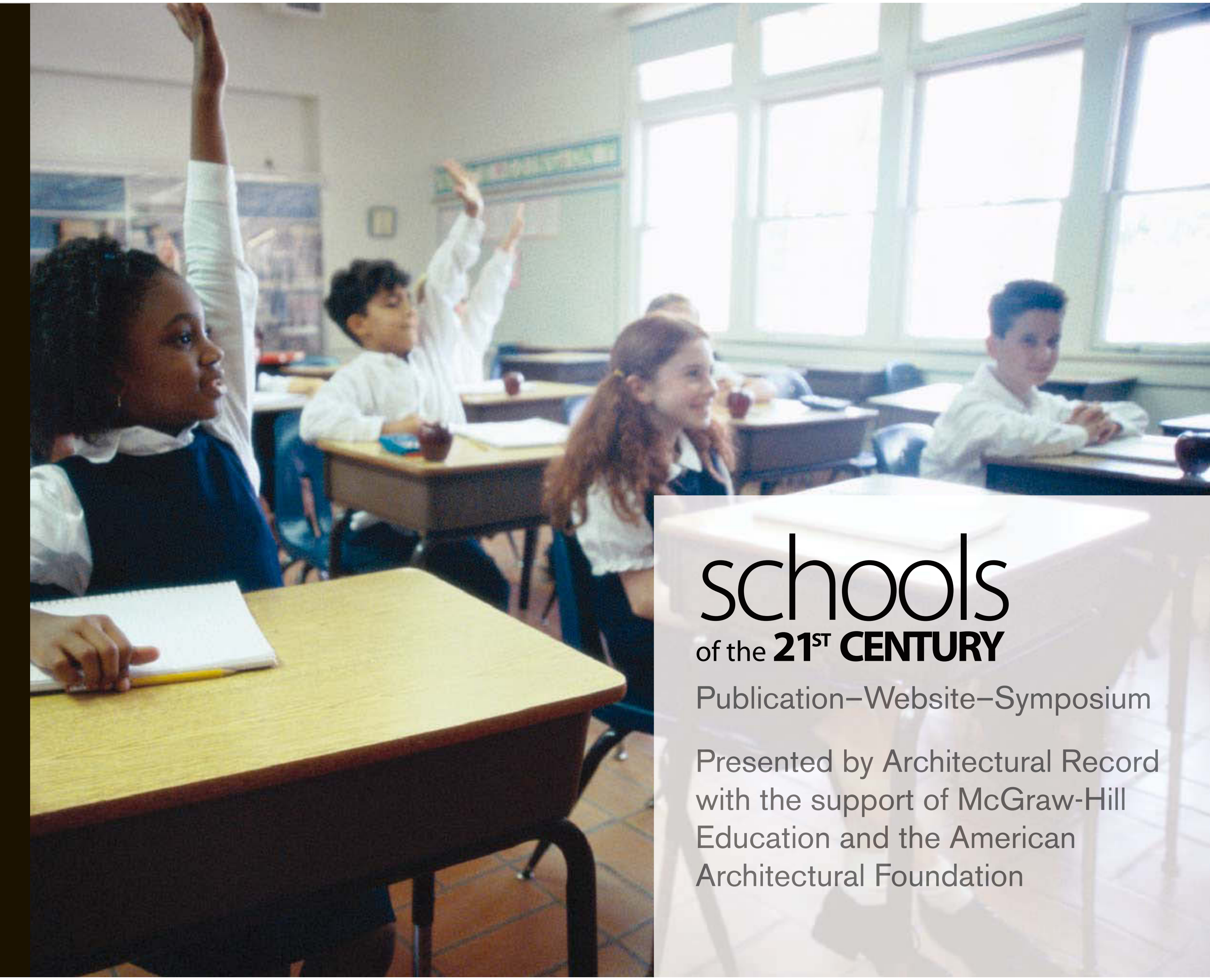

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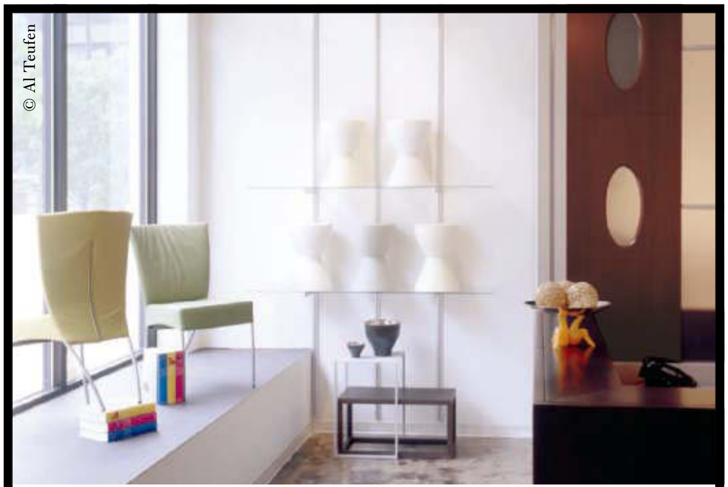

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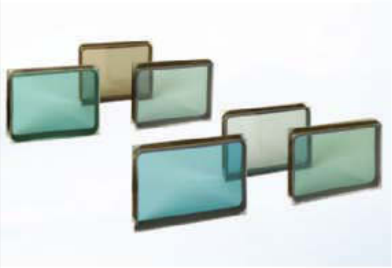

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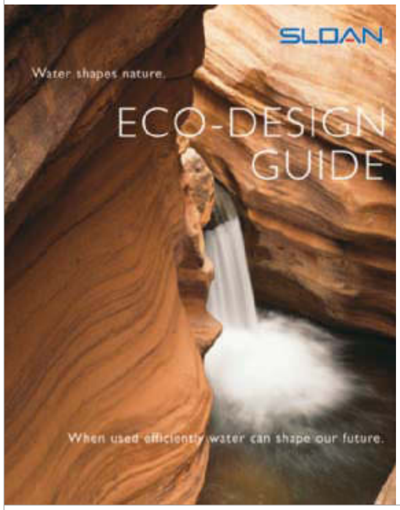
Eco-Design Guide



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Sloan Valve Company's new "Eco-Design Guide" describes the sustainability challenge and how specifying water- and energy-efficient plumbing systems can make a significant difference. A product chart displays the water-savings estimates of Sloan's water-efficient products — including Waterfree Urinals, manual and sensor-operated Flushometers, pressure-assist flushing technology and 0.5-gpm faucets. Calculations of potential savings, based on number of uses, fixture type, and flow rate and duration, help substantiate water-efficient fixture purchases. 800-9-VALVE-9 www.sloanvalve.com

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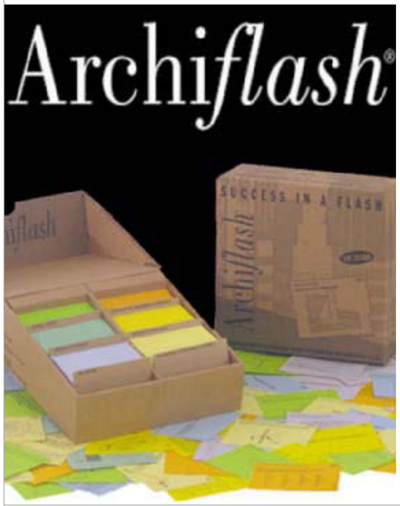

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| Circle **156**

LED Puck Lights

Architectural Products by Outwater

Think Green! Outwater's new low cost LED Puck Lights are energy efficient, consuming only 1.25w per fixture. Comprising 12 point cool white or warm white LEDs with a protective diffuser glass and an all metal housing, bulb life is rated at 50,000 hours. Low heat emissions make this fixture ideal and safe for a variety of applications. The fixture can either be recessed or surface mounted, and can be interconnected up to 9 fixtures. Available in many finishes. They're Green. Are You?

Free 1,000+ Page Master Catalog. 800-835-4400 www.Outwater.com

| Circle **159**

Door Canopy Kits

LIGHTLINE
13

Feeney Architectural Products

LightLine® canopies offer the utmost in function and design. Sold in easy to assemble, easy to order kits with brushed stainless steel support brackets, UV resistant acrylic visor panes, integrated aluminum rain gutters and all the necessary assembly hardware. Kits come in a variety of styles and sizes with clear or frosted pane finish options, and the special Click-Lock pane attachment feature makes installations a breeze. 800-888-2418 www.feeneyarchitectural.com

| Circle **157**

Solid Hardwood Flooring

Lumber Liquidators

With its exclusive high abrasion aluminum oxide finish and 50-year warranty, Bellawood is a premier manufacturer of pre-finished solid hardwood flooring. When you choose Bellawood Pre-Finished Hardwood Floors there's no messy sanding or smelly fumes. Domestic and exotic species, like Australian Cypress and Brazilian Walnut, are available to complement any design. Bellawood is available at Lumber Liquidators. 800-FLOORING www.bellawood.com

| Circle **160**

Weave Panel System

Móz Designs, Inc.

The Weave Panel System is created with their unique metal surfaces and adds color, texture and movement to your environment. Interweaving their 2-sided aluminum material between extruded aluminum poles creates their Weave Panel System. This dynamic artwork is available in 12 unique patterns and 16 different colors. Select the subtle or vibrant combination for your environment and unique message. Their custom artwork is available in a variety of sizes. 510-632-0853 ext. 17 Fax number 510-632-0852 www.mozdesigns.com

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Melton Classics

Melton Classics provides the design professional with the most comprehensive selection of quality architectural products in the industry, including architectural columns, balustrades, mouldings, cornices, and a wide array of architectural elements. Architectural columns are available plain or fluted, load-bearing or column covers, round or square in fiberglass, fiberglass/marble composite, synthetic stone, cast stone, GFRC, and wood for paint or stain. Melton Classics offers several maintenance free balustrade products ideal for any application. Visit their web site for information and specifications. 800-963-3060 www.meltonclassics.com

| Circle **161**

Certified Doors & Windows

American Architectural Manufacturers Association

They go through a lot to protect your reputation. At the American Architectural Manufacturers Association, they're obsessed with the quality of doors and windows. Every product that displays their certification label has had a sample of its design pass independent, accredited lab tests for resistance to wind pressure and air and water leakage. To learn more, visit their web site. aamanet.org/certification

Circle **162**

Daylighting

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Curtainwalls, Window Replacement Systems and Skylights of every imaginable configuration from a world leader in translucent daylighting with over 50 years of innovation and performance. Renowned for balanced, diffuse natural light, Kalwall fills any space with glare-free, shadow-free, pure Museum-quality Daylighting™ and advanced insulating performance. An inviting nighttime glow brings any building to life while preventing direct-beam illumination from escaping the building. Daylight modeling service. Green and LEED®. 800-258-9777 www.kalwall.com

Circle **165**

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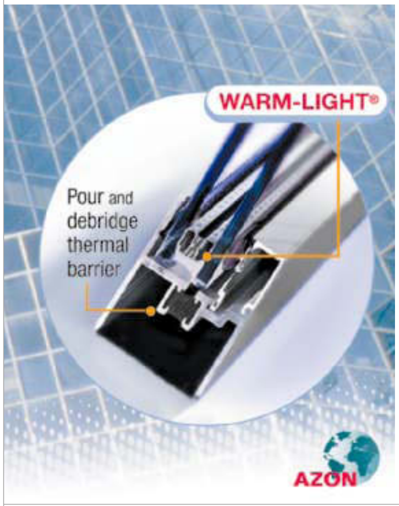
WARM-LIGHT®
Pour and debridge thermal barrier
AZON

AZON USA INC.

Warm-Light® spacer for insulating glass provides a more comfortable interior environment, reduces thermal conductivity and condensation on the glass surface while lowering utility costs. AZON is the global leader in developing technology for the manufacture of thermal barrier aluminum fenestration, commonly referred to as the pour and debridge method. 800-788-5942 www.warmedge.com

Circle **163**

Movable Glass Partitions

Luconi

Osso is a real biomechanical sculpture, characterized by the peculiar aluminum bar, which has the double function of supporting panels and pieces of furniture. It stands simply and securely, either by putting pressure between floor and ceiling or can be self-supporting in some configurations, offering a wide range of panels and materials for partitions, doors, furnished walls, closets, desks, bookshelves, drawers, and containers. This pure, functional element, like a dress, finds space in applications such as home, office, retail, kitchen and bathrooms. 310-734-8782 www.luconi-usa.com

Circle **166**

Versatile Windows

Fenevations, LLC

Fenevations manufactures MegaWood, Infinity Bronze, and SteelView windows. Megawood offers fine hardwoods with furniture-grade finishes, combined with heavy gauge bronze or hand welded, aluminum extruded exteriors. Infinity Bronze is a unique thermally broken solid bronze system offering beauty, style and traditional sightlines. SteelView offers stainless steel beauty for contemporary designs. 908-688-5710 www.fenevations.com

Circle **164**

Versatile, Energy-Saving Daylighting

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Transform dark, poorly lit spaces with cost-effective translucent fiberglass, polycarbonate multiwall, glass and acrylic daylighting solutions – available in custom and pre-engineered configurations that fit every design and budget. Their Guardian 275® Translucent Daylighting Panels allow controlled natural light to illuminate spaces while eliminating glare and hot spots. LEED® credit opportunities, integral water management systems and industry-leading warranties make Major Industries the right choice for your next project. 888-759-2678 www.majorskylights.com

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Doors for Interior Architecture

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Some will say that nothing is more beautiful than wood. Woodfold Mfg., Inc. would agree. Woodfold Mfg., Inc. custom made accordion and roll-up doors (available in hardwood and non-hardwood finishes as well) are both functional and beautiful. Woodfold Mfg., Inc. has models available for use as sight, security, and acoustic applications. Its solid hardwood roll-up doors coil conveniently overhead. And, to assure on time completion of your projects, Woodfold Mfg., Inc. has an excellent production cycle. 503-357-7181 Fax number 503-357-7185 www.woodfold.com/AR

| Circle **168**

Custom Ceiling Solutions

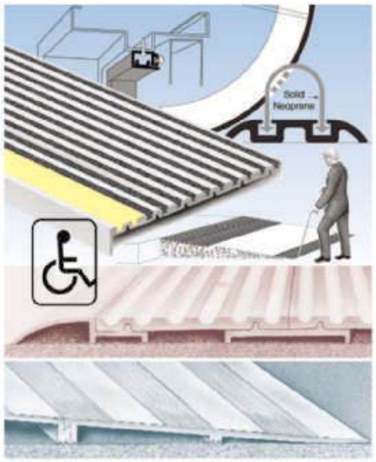
eventscape®

Eventscape Inc.

Eventscape manufactured the flowing, framed fabric ceiling panels that expand the spectrum of mood and atmosphere in this upscale restaurant complex in Miami. They work with designers worldwide to create unique solutions for ceilings, columns, walls, and special features, clad in any material. Contact them at info@eventscape.net "Create without boundaries."™ 416-231-8855 www.eventscape.net

| Circle **171**

ADA & ANCI Compliant Access Systems



Zero International, Inc.

ZERO International manufactures a complete line of ADA and ANCI compliant components: ramps, saddles, thresholds, wheel chair accessible shower entry, "light-spring" action head/jamb and door bottom gaskets, stair nosings and detectable warning strips, unigear and unipin hinges. All available in their catalog, on their website or through their engineering department. 800-635-5335 www.zerointernational.com

| Circle **169**

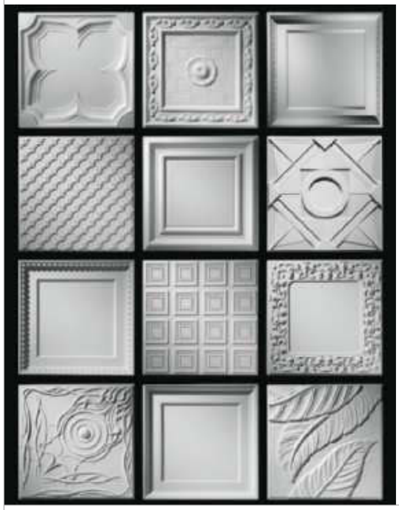
Custom Molded Architectural Shapes

Formglas

Custom molded architectural shapes by Formglas expand design opportunities for interiors and exteriors. Lightweight and durable GRG and GRC components are cast in an endless array of shapes, textures and color finishes. Their team of trained professionals work with you to find practical and easy to install solutions that enhance aesthetic appeal. 416-635-8030 Email Info-ar5@formglas.com www.formglas.com

| Circle **172**

Ornamental Plaster Ceiling Tiles



Above View Mfg., By Tiles, Inc.

Above View ornamental plaster ceiling tiles are fabricated from a non-toxic, noncombustible, proprietary composition. They drop into any standard 15/16-in. T-Bar grid system. There are more than 50 standard designs, custom design work, and 1,300 custom colors and faux finishes available upon request. 414-744-7118 www.aboveview.com

| Circle **170**

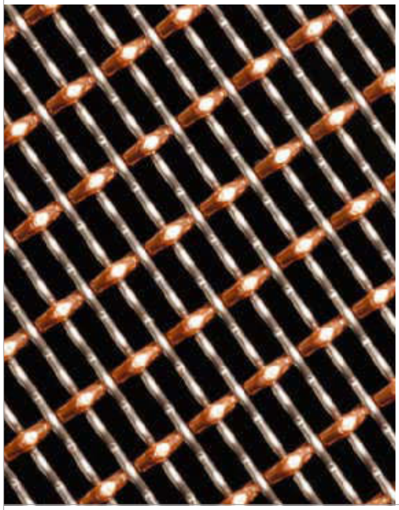
Floor System

Gage Corporation, Int.

The Gage Stainless Steel Floor System by Planium is a durable, high-tech flooring solution designed and manufactured in Italy for purity of form and ease of installation. The embossed stainless steel and black organic finishes have been designed to prevent traffic wear and are virtually indestructible. Contact the Gage factory for literature and sample requests. 866-855-4243 Email gage@centurytel.net www.gagecorp.net

| Circle **173**

Wire Mesh Systems



Cage Corporation, Int.

GageWoven® is a creative collection of 23 designs suitable for walls, elevator interiors, ceilings, and other architectural fabrication. Custom sizes and made to order panel systems are available. Custom designs are also encouraged. Contact the factory for literature and sample requests. 800-786-4243 Email gage@centurytel.net www.gagecorp.net

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CONTINUING EDUCATION
AIA

Linetec

Linetec, a Kynar 500/Hylar 5000 paint, anodize and powder coat finisher offers "Introduction to Coatings: Field Performance and the Application Process" as a registered online learning program to help you attain your AIA Continuing Education credits. This presentation is available on-demand from Linetec's Architect Resource Center located on their web site at www.linetec.com. 888-717-1472 www.linetec.com

| Circle **177**

Sports Floors

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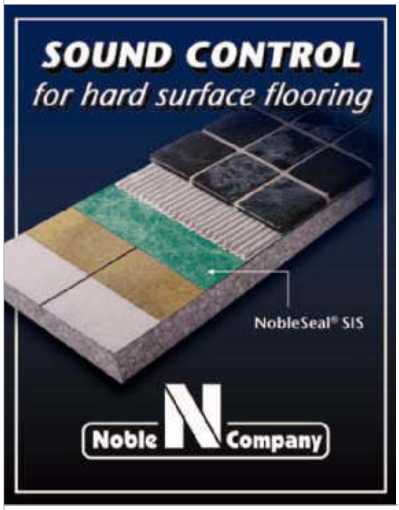
SPORTS FLOORS
American Sports Center, Anaheim, CA
100,000sf of Haro Helsinki 10
Largest Sports Hall in the World

Haro Sports Floors

Athletes shouldn't suffer through injuries due to a poor performing sports floor. Athletic Floor Systems provides high performing, safe and low cost gymnasium floors. AFS supplies sports floors for competition gyms, sports arenas and multipurpose facilities. There are more than 7500+ installations in over 65 countries. Demand performance, safety and low cost in your next sports floor. 800-323-6792 www.haro-usa.com

| Circle **175**

Reduce Impact Noise



Noble Company

NobleSeal® SIS is a sheet membrane that reduces the impact noise produced by hard surface flooring (like tile and hardwood floors). SIS is only 3/64-in.-thick so it minimizes problems with transitions and the need to alter door and cabinet heights. It is effective at reducing noise (IIC=62; STC=59). SIS can be installed over all common substrates, even gypsum concrete and radiant heating systems. SIS can also protect thin-set tile from cracking and provide waterproofing. Visit their web site. 800-878-5788 Email richard@noblecompany.com www.noblecompany.com

| Circle **178**

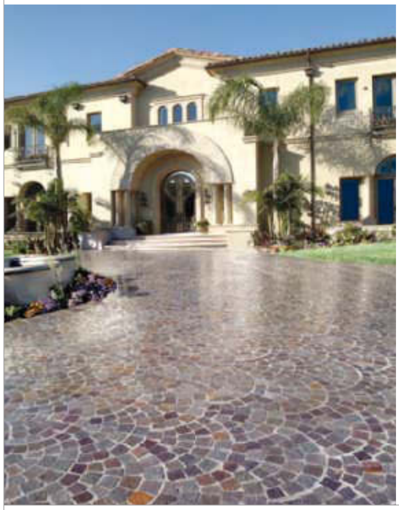
Green Roof Systems

Homasote Company

Homasote Company, one of America's leading green building products manufacturers and nailbase roof insulation's originator, has received Factory Mutual approval for N.C.F.R.® Thermasote® on steel roof decks. Use it to specify attractive, residential-looking roofs for multi-family, mixed-use, commercial, medical and other construction. For an alternative green roof system, excellent for conventional and LEED® construction, specify Firestall® Roof Deck with N.C.F.R. Thermasote. Wind uplift tests show these Homasote® systems make code in wind-prone areas. 800-257-9491 ext. 1211 www.homasote.com/thermasote

| Circle **176**

Architectural Surfaces



SOLI

SOLI offers one-of-a-kind architectural surfaces for traditional and contemporary applications. From metal to marble, granite to glass, SOLI products bring distinctive design to floors and walls, indoors and out. They also offer a variety of unique porphyry, cobblestones and pavers. Visit their web site to view their extensive collection of innovative tile and natural stone. 800-410-7654 www.soliusa.com

| Circle **179**

Energy-Efficient Wall Panel

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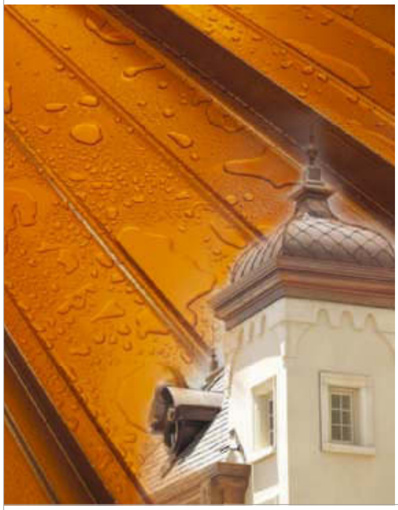
The accel-E™ Steel Thermal Efficient Panel (S.T.E.P.) from ACCELERATED Building Technologies is a thermally resistant, high performance building panel that's strong, lightweight and energy efficient. Combining the strength and performance of cold-formed steel framing with the superior insulation properties of expanded polystyrene, the accel-E™ STEP wall system simplifies framing, insulation and sheathing to just one installation process. 888-9-accelE (888-922-2353) www.accel-E.com

Circle 180

Architectural Sheetmetal Products



CopperCraft

Structural integrity and performance are as important as aesthetics. Applying this understanding to the manufacture of its products is what sets CopperCraft apart from the competition. Their design, engineering, testing, and fabrication methods meet stringent structural and performance standards. You get unsurpassed quality, delivery, and custom service including a nationwide network of representatives. Their complete line of high quality architectural sheetmetal products include ornamental dormers, roof vents, roof drainage products, conductor heads, steeples, cupolas, and spires. 800-486-2723 www.coppercraft.com

Circle 183

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Custom Canopies & Walkway Covers

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CPI is a world class provider of custom translucent canopy systems. CPI canopy systems provide an excellent shelter and give an open air feeling by allowing natural daylight to light up the area below. At night, CPI translucent systems provide a dramatic visual effect when backlighting is introduced. Suitable for Green building projects requiring LEED points for sustainable construction. 800-759-6985 www.cpidaylighting.com

Circle 184

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541
1341
751

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Circle 182

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Regency has enhanced the security of the "Regency Collection" of decorative CBU mailboxes to meet or exceed the newest USPS standards. High-strength, heavy-gauge doors and high security locks help resist even the most determined vandal or thief. Units come in USPS gray, black or bronze. Custom powder coat colors are also available. Patent #D528,734. 800-265-0041 www.mailboxes.info

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DuraPorts® ParkPorts are engineered to withstand wind speeds up to 130 mph. Their unique cantilever, dome-shaped design uses a leading synthetic fabric, offering exceptional UV resistance and maximum shade protection. Modular design options allow the perfect balance between form and function. 843-784-7740 www.duraports.com

Circle **186**

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CLOCK WORKS BY BALZER

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Their timekeeping and chime systems are made specifically to accommodate the requested application and are designed to be displayed. Weight driven, pendulum regulated with the option of an automatic winding system, their mechanical clock works will serve as a timekeeper inside and outside of the building as well as a teaching tool for mathematics, physics and mechanics. 207-865-1799 www.balzerclockworks.com

Circle **188**

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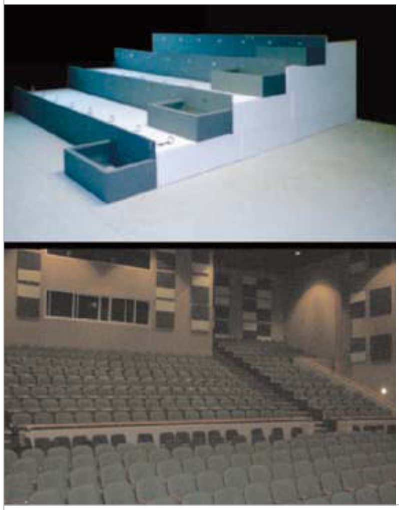
Circle **189**

Riser System for Stadium Seating

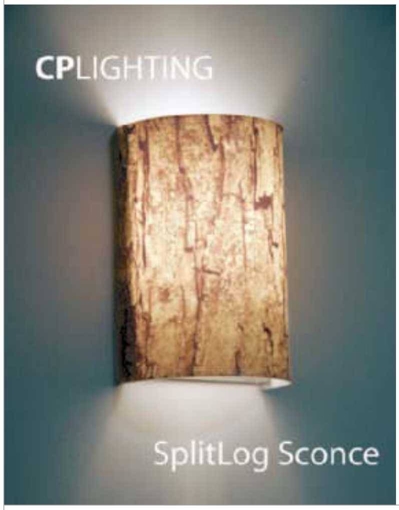


Stadium Savers

Stadium Savers provides an economical and proven alternative for achieving stadium seating tiers in an existing or new building. Stacked Geofoam blocks and Stadium Savers metal risers provide stable formwork for concrete seating platforms. The system is lightweight, easy to install, and is custom cut at the factory to suit straight, curved, or segmented seating layouts.

Circle **190**

Custom Light Fixtures



CP LIGHTING

CPLIGHTING introduces the new *SplitLog Sconce*, part of their *LogLamp* series. These UL listed custom printed fixtures are the ultimate in faux bois, combining high-resolution photos of tree bark with luxuriously smooth plastic. Perfect for the hospitality industry, the sconce is ADA compliant at only 4-in.D x 10-in.H x 8-in.W. They can lamp with either type A socket up to 75W or with a dedicated CFL fixture and ballast. CPLIGHTING also offers custom image bonded acrylic and custom lamp design to fit your project-specific needs. Visit their web site to see a complete line of modern light fixtures. 866-597-4800 www.cplighting.com

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Architectural Ceiling Fans & Lighting

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Circle **192**

University & College Lighting Products

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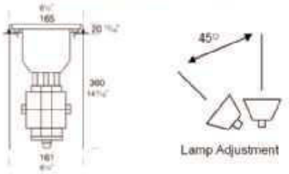
Sternberg Lighting offers a variety of lighting styles that complement any type of architecture while creating safe and secure campuses. Traditional and Architectural luminaries offer a wide selection of high performance optical systems. Consider the new NIGHT-SKY™ STAR-SHIELD Roof Optics or the OPTI-SHIELD Louver Optics for improved light efficiency and cut-off. Many of these systems conform to the latest Dark Sky regulations. Schools and Universities can coordinate their street lighting with Sternberg site amenities to achieve a look of total continuity. Call, fax or email for a current 200 pg. catalog. Visit their new website. 800-621-3376 www.sternberglighting.com

Circle **195**

Versatile Lamp

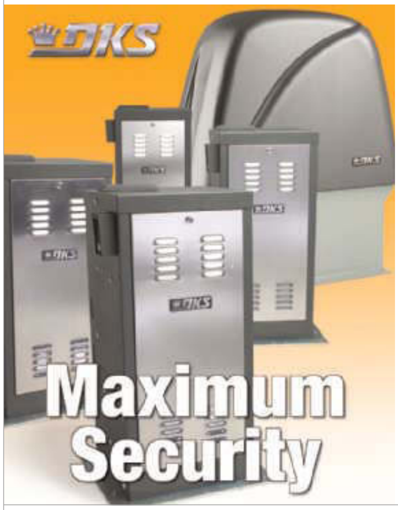


Hunza Lighting USA

The Hunza IG111GM Well Light offers the ultimate in lamp adjustability, combined with flush installation, durable construction and compact size. Using a standard halogen MR16 up to 75W, the lamp can be adjusted up to 45 degrees from vertical. Easily installed with the supplied mounting canister, the fixture has an integral 110v transformer and a heavy-duty drive-over lens. 310-560-7310 www.hunzausa.com

Circle **193**

Maximum Security Slide Gate Operators



DoorKing

The DKS Maximum Security vehicular slide gate operators are designed for high security applications only—such as industrial locations, loading docks, factories, prisons, airport security areas, etc. Several models feature maximum choices depending on the application. Designed for use on very large and very heavy gates. Anti-tailgating circuitry and an adjustable partial open feature help prevent unauthorized vehicle access. Solid-state speed control modules are available that start and stop the gate slowly. Gate speed is user adjustable, making these operators ideal for security sensitive areas. 800-826-7493 www.doorking.com

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Circle **197**

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UNIVERSITY OF OREGON

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The Architecture Program invites applications from excellent design studio teachers with expertise in one or more subject areas that can include but not limited to: architecture theory, sustainability, housing, building construction and fabrication, design methods, and media (digital or traditional).

Assistant or Associate Professor of Interior Design + Theory and Practice

The Interior Architecture Program invites applications from excellent design studio teachers with expertise in one or more subject areas that can include but not limited to: interior design history and theory, sustainability, interior construction and detailing, furniture design or fabrication, materials, lighting, color theory, design methods, and media (digital or traditional).

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Qualifications

All applicants must hold appropriate advanced degrees and demonstrate the potential for achievement in teaching and research or creative practice.

Applications

Descriptions of the individual positions and application requirements are available on our web site: **http://architecture.uoregon.edu/people/positions**; or you may contact Nancy McNaught, Office Manager, Faculty Search Committee, Department of Architecture, University of Oregon, Eugene, Oregon 97403-1206. Telephone: 541-346-1435; e-mail: **mcnaught@uoregon.edu**. For more information about teaching opportunities at the University of Oregon, you may also contact Christine Theodoropoulos, Head of the Department of Architecture at **ctheodor@uoregon.edu**; or Alison Snyder, Director of the Interior Architecture Program at **absny@uoregon.edu**. Review of applications will begin January 7, 2008 and continue until the position is filled.

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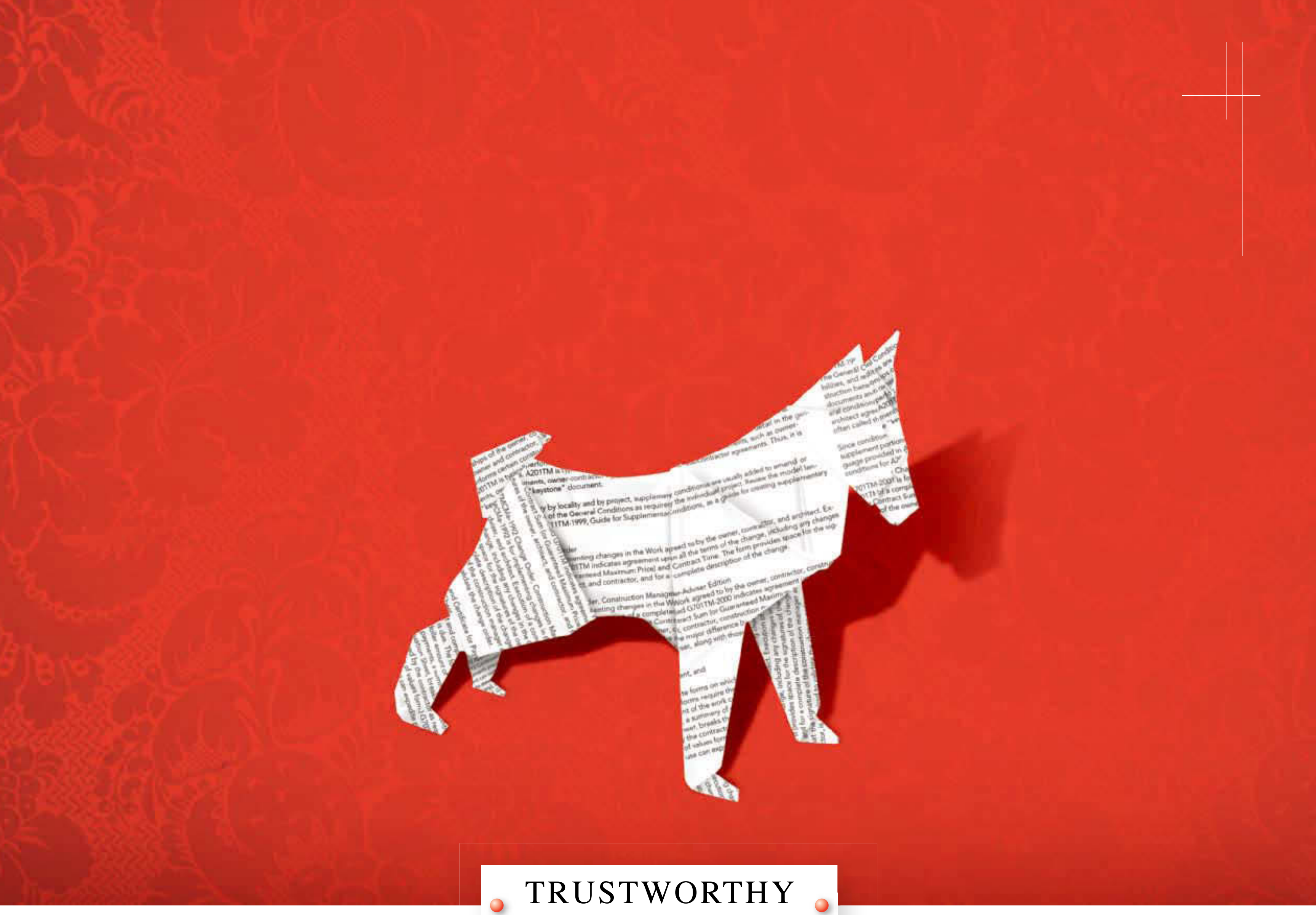

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Some people see architects as being a little stuck on themselves.

Which seems unfair when you're as hip and interesting as we are. Still, it is understandable that others may get a bit envious. That's all the more reason to show a bit of humility when dealing with non-architects. Here are a couple of ideas showing those non-architect types why it is so cool being an architect, and why joining the AIA will be the best decision of your career.

How to Work "I'm an Architect" into Casual Conversation.

Play the "Green" card.

The next time some cute dude/chick is passionately extolling the virtues of saving the planet, say how you refused to live with that powerless feeling of standing by helplessly.

When he/she asks what you are doing about it, you reply, "I'm an architect!"

When faced with an impressed but somewhat confused look, you confidently explain sustainable design and the positive impact that things like energy efficiency and using sustainable building materials has on the planet.

Disclaimer: Married individuals should exercise great care in playing the green card; it has been known to lead to being "asked out." Also, visit aia.org to read up on sustainable building facts; playing the green card without the facts to back it up may make you look idiotic.

How to Work "I'm an Architect" into Casual Conversation.

Start a Band.

Picture this... You just finish up a killer first set when fans start lining up to tell you how awesome you play cowbell. You calmly let them know that it's not just raw talent; it took years of practice to master that hunk of metal.

The envy in their eyes is obvious. There is nothing cooler than a musician. Ha! Just wait!

They ask, "Is this what you do for a living?"

You reply, "No, I have a day job."

"Really! What do you do?"

"I'm an architect!"

An architect AND a musician! At some point, you will begin feeling sorry for people because they aren't you.

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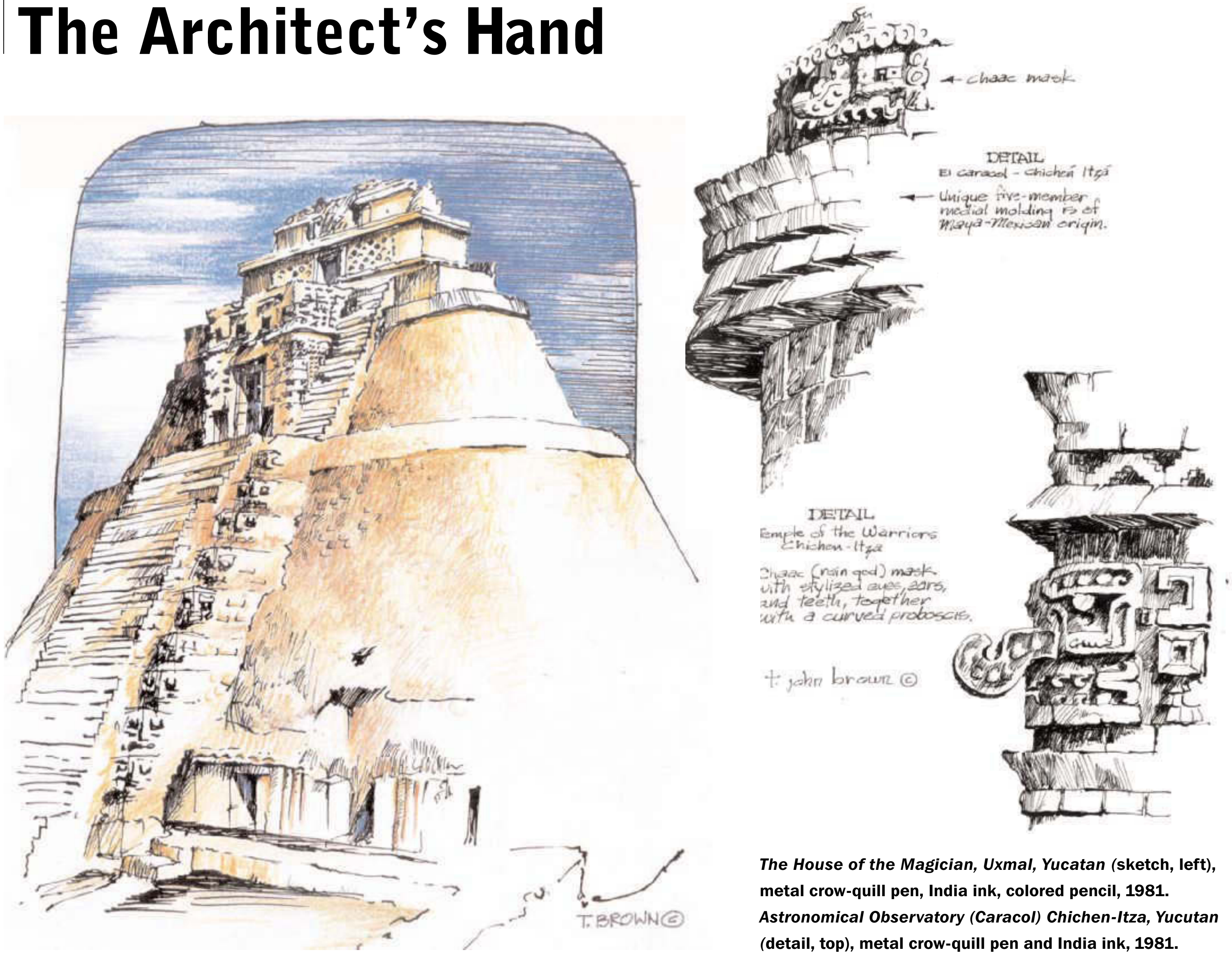
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The House of the Magician, Uxmal, Yucatan **(sketch, left), metal crow-quill pen, India ink, colored pencil, 1981. *Astronomical Observatory (Caracol) Chichen-Itza, Yucutan*** **(detail, top), metal crow-quill pen and India ink, 1981. *Temple of the Warriors, Chichen-Itza, Yucutan*** **(corner detail, above), metal crow-quill pen, India ink, 1981.**

Documenting the real early America

The activities of working with and documenting native peoples and cultures of the North American continent loom large in the life of Albuquerque architect Terrence J. (Terry) Brown, FAIA. Born in Montana near an Indian reservation, schooled in Montana and Texas, Brown spent eight years in Guatamala (1973–81), where he trained Peace Corps volunteers. Sketching provided more than aesthetic pleasure: It sometimes allowed him to communicate with non-English-speaking people.

An avid sketch artist, Brown has documented his travels and experiences since student days at Montana State. In 1981, before returning to the United States from Central America with his wife and two daughters, he spent more than a month traveling throughout the region, "camping at every Mayan site we could find," he says, including locations in Honduras and Guatamala. In Mexico's Yucatan peninsula, he visited and sketched Uxmal and Chichen-Itza, Mayan urban centers depicted in the drawings shown here. He captured the jungle-laced temples and steles with a crow-quill pen and India ink, placing the ink bottle near his feet when terrain prohibited sitting.

Brown traveled throughout Europe at age 21 with his identical twin brother, Morris—who is also an architect—filling a sketchbook, a practice he continued throughout his years on duty in Vietnam (1970–71). In a varied career that has brought him recognition and honor for volunteerism, including the AIA's prestigious Whitney Young Award, Brown has promoted the art of sketching for architects—a skill that has taken on increased urgency in the digital era. *Robert Ivy, FAIA*

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